



NORTH SOMERSET COUNCIL

Green Infrastructure Strategy



Parks



Beaches



Green spaces



Countryside



Waterways



Wildlife

ethos
Environmental Planning



CONTENTS

	Page
1. Introduction	2-6
2. What is Green Infrastructure and why do we need a Green Infrastructure Strategy?	7-13
3. Vision, Aims and Objectives	14-15
4. Understanding the Value of Green Infrastructure	16-17
5. Planning for Good Quality Green Infrastructure	18-19
6. Policy Context	20-22
7. Existing Green Infrastructure in North Somerset	23-28
8. Opportunities and Recommendations for Improving Green Infrastructure – through NSC Land, Third Party Land and Planning and Development	29-57
9. Delivery and Monitoring	58-60
Appendix 1 Initial consultation with NSC – summary	
Appendix 2 Policy context	
Appendix 3 GI maps by theme	
Appendix 4 GI opportunities for improvement	
Appendix 5 NSC ‘re-wilding’ maps	
Appendix 6 Funding opportunities	
Appendix 7 Example Natural Capital Accounting Tools	

1. INTRODUCTION

1.1. Overview

Ethos Environmental Planning Ltd (Ethos) were commissioned by North Somerset Council to produce a Green Infrastructure Strategy for the district.

The Strategy sets out the strategic Green Infrastructure (GI) network within North Somerset until 2030. It provides the framework for improving the connectivity, quality, and overall provision of GI, in order to maximise environmental, social and economic benefits and address diverse policy requirements including health and wellbeing, biodiversity and climate change.

It provides a robust evidence base to inform the preparation of GI planning policy in the Council's new Local Plan (covering the period up to 2038) and will support and help deliver the requirements and aims of national, regional and local policy and strategy, including the Council's vision for 'An open, fairer, greener North Somerset'.

The strategy also supports the Council's management of its own land, and recognises the importance of third-party land in positively contributing to GI within the Study Area. It provides an action plan for the delivery of both short-term and long-term GI projects.

Green infrastructure (GI) is a strategically planned network of natural and semi-natural areas with other environmental features designed and managed to deliver a wide range of benefits (known as ecosystem services) such as water purification, pollination, timber and crop production, air quality, space for recreation and climate mitigation and adaptation. Ecosystems and the services they deliver underpin our very existence. However, they are being degraded by many pressures, including from agricultural management, climate change, hydrological change, urbanisation, pollution, woodland management and invasive non-native species (State of Nature Report 2019). Degraded ecosystems are less biodiverse and are unable to offer the same services as healthy ecosystems.

Well planned and managed, functioning green infrastructure is crucial for people, places and nature and is a key component in tackling the nature and climate emergency.



Photo: Severn Estuary by Charlie Fayars

1.2. Aims and scope of the Strategy

1.2.1 Aims

The overall aim of the Strategy is to protect high quality and replace poorly performing GI, whilst enhancing other areas where possible within North Somerset, in order to maximise the multiple benefits (ecosystem services) that the natural environment provides. These ecosystem services include pollination and food production, timber production, climate regulation, air and water quality regulation, flood protection, maintenance of biodiversity and space for recreation (to name a few). Ecosystem services are essential to the survival of humanity, and in tackling priorities such as the health and wellbeing of individuals and communities, and the nature and climate emergency.

The Strategy also aims to raise awareness of the importance and multiple benefits of GI and sets out actions that can be undertaken by the Council, residents, businesses and partners, to protect and enhance GI.

1.2.2 Scope

The Strategy identifies the existing significant green and blue assets and corridors within North Somerset and identifies opportunities for improving connectivity and quality/functionality, for both people and wildlife. It provides a joined-up approach with the West of England Unitary Authorities and considers strategic GI within adjoining local authority areas, recognising that GI networks operate across boundaries, and at multiple scales.

The Strategy provides a robust evidence base, enabling a coherent approach to decision making, planning policy and development management recommendations. It has been undertaken in accordance with the National Planning Policy Framework (NPPF), which requires that local planning authorities should set out a strategic approach in their Local Plans, to maintaining and enhancing networks of habitats and green infrastructure. It has been informed by the West of England Joint Green Infrastructure Strategy (JGIS) (2020-2030) where we share objectives and will support the delivery of regional priorities.

The Strategy covers the following:

- Setting the case for GI in the context of the nature and climate emergency.
- A review of relevant policy, strategy, and research, to provide the strategic context for the strategy and identify how the strategy can contribute to wider national, regional and local agendas including climate change, health and wellbeing, biodiversity, sustainable transport, sustainable growth and food security.
- Mapping of key strategic GI assets (in a GIS layer and report maps) by themes (Water/Blue GI; Access Routes/PROW and Open Space; Biodiversity and Habitats; Food Growing Areas and Heritage and Landscape).
- Identification of key strategic GI corridors within NS, including links to neighbouring local authority areas;
- GI vision and objectives for North Somerset;

- Identification of opportunities for improving the functionality of the GI network, for both people and wildlife, through planning and development; utilising third party land; and NSC land. This considers quality, connectivity and access to GI.
- Existing standards and mechanisms for planning and delivering good quality GI through new development, and provides examples of best practice;
- GI policy recommendations to take forward in the new Local plan;
- Setting out how the strategy will be implemented, monitored and delivered, with an action plan which sets out both short term and long-term actions.

This Strategy refers to existing open space standards (GI standards) which were developed in 2009 and are set out in the North Somerset Development Contributions Supplementary Planning Document (January 2016).

1.3 Report structure

Green Infrastructure underpins all of our lives and is essential to a healthy and resilient environment – and therefore to healthy and resilient communities, and a sustainable economy. Due to its multifunctionality, GI covers a vast subject area and this strategy has therefore sought to achieve a balance between providing sufficient and relevant information for non-specialists, while also being as concise as possible.

This GI Strategy report includes the following sections:

Part 1: Main Report (this report)

- Introduction
- What is Green Infrastructure and why do we need a Green Infrastructure Strategy?
- Vision, Aims and Objectives
- Understanding the Value of Green Infrastructure
- Planning for Good Quality Green Infrastructure
- Policy Context
- Existing Green Infrastructure in North Somerset
- Opportunities for Improving Green Infrastructure – through NSC Land, Third Party Land and Planning and Development
- Delivery and Monitoring

Part 2: Action Plan

The Action Plan is provided as a separate Document.

Appendices

There are also a series of appendices (1 to 6) which provide further detail. These are set out within the contents page and are referred to throughout the report.

1.4 Study Area

Overview of North Somerset District

Figure 1 - Study Area



North Somerset covers an area of around 37,500 hectares (145 square miles) with a population of 215,052 (ONS mid 2019 population estimate). It lies south west of Bristol, abutting the city boundary to the north and east. The Severn estuary coast to the west and the Mendip Hills in the south. There is a varied landscape with coastal and rural, international and national designations such as Sites of Special Scientific Interest and the Mendip Hills Area of Outstanding Natural Beauty.

North Somerset’s primary town is Weston super Mare, followed by Clevedon and Portishead (which are all located on the coast). The other main town of Nailsea is located on the outer edge of the Green Belt near Bristol.

Levels of deprivation (IMD) within North Somerset are generally low. However, parts of Weston-super-Mare have some of the highest levels of deprivation in England (see Appendix 2, Section 5). Green infrastructure can help improve quality of life in areas of deprivation.

The geographical location of North Somerset makes it an attractive tourist destination. Its combination of coastal setting, beautiful countryside, accessibility via the M5 and Bristol Airport, and close proximity to Bristol, the City of Bath (a World Heritage Site), Cheddar Gorge, Wells and the rest of Somerset make it a versatile location which could appeal to a wide tourist market.

Environment and Landscape Context

The landscape of North Somerset is highly varied, with open moors and river flood plains contrasting with ridges, gorges and rolling farmland. In the north of the district there are a large number of Registered Parks and Gardens and extensive woodland, which in combination with the varied topography limits visibility. Elsewhere in the district tree cover is concentrated on the slopes of hills and ridges, and long-distance views are available from areas of high topography across the open moors and flood plains.

The natural environment of North Somerset contributes substantially to the identity, sense of place and quality of life in the district, as well as its economy and attractiveness as a place in which to live and invest.

The predominantly rural setting throughout North Somerset coupled with its varying geology and topography has resulted in a landscape of great nature conservation value which is reflected in the number of international, national and locally designated sites throughout the area. This includes: 4 Special Areas of Conservation¹ (SAC), including the Severn Estuary European Marine Site (which is a SAC, Special Protection Area (SPA) and Ramsar site); 56 Sites of Special Scientific Interest (SSSI), 2 National Nature Reserves (NNR), 13 Local Nature Reserves (LNRs) and the Mendip Hills Area of Outstanding Natural Beauty (AONB).

There are also 204 Local Wildlife Sites and 77 Local Geological Sites (non-statutory designated sites), and 860km of Public Rights of Way across the district.

North Somerset has a diversity of habitats, including limestone grasslands, traditional orchards, wetlands, rhynes, commons, moorland, hedgerows, ancient woodlands, estuary, maritime cliff and saltmarsh. These habitats in turn support a rich diversity of wildlife, including many protected and important species such as horseshoe bats, otters, dormice, water voles, great crested newts, hedgehogs, brown hare, wildfowl and wading birds, swallows, sky larks and invertebrates.

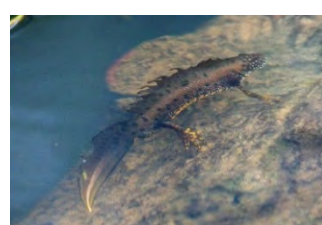
Ecological richness is not limited to only designated sites but is present throughout the district. For example, the North Somerset moors, although consisting mainly of improved grazing marsh on clay and peat soils, are of great ecological value due to the vast network of ditches and rhynes which contain a variety of aquatic life from plants to invertebrates, mammals and molluscs.



Hazel dormice



Lesser horseshoe bats



Great crested newt

¹ The Severn Estuary European Marine Site (SPA/SAC/Ramsar); The Mendip Limestone Grasslands (SAC); The Avon Gorge Woodlands (SAC) and North Somerset and Mendip Bats (SAC).

*

2.0 WHAT IS GREEN INFRASTRUCTURE AND WHY DO WE NEED A GREEN INFRASTRUCTURE STRATEGY?

2.1 Definition of GI



Image: from Building with Nature

Green infrastructure is a **strategically planned network of natural and semi-natural areas** with other environmental features designed and managed to deliver a wide range of ecosystem services such as water purification, air quality, space for recreation and climate mitigation and adaptation.

This network of green (land) and blue (water) spaces can improve environmental conditions and therefore citizens' health and quality of life. It also supports a green economy, creates job opportunities and enhances biodiversity².

Many environmental features make up green infrastructure, but they are underpinned by two fundamental concepts which are outlined in Table 1 below.

Table 1 - Explanation of the two components that enable green infrastructure

Concept	Definition
Natural capital	The world's stocks of natural assets which include geology, soil, air, water and all living things.
Ecosystem services	Natural capital delivers a wide range of services, often called ecosystem services, which make human life possible and include production of food and water, regulation of floods, and non-material benefits such as recreational and spiritual benefits.

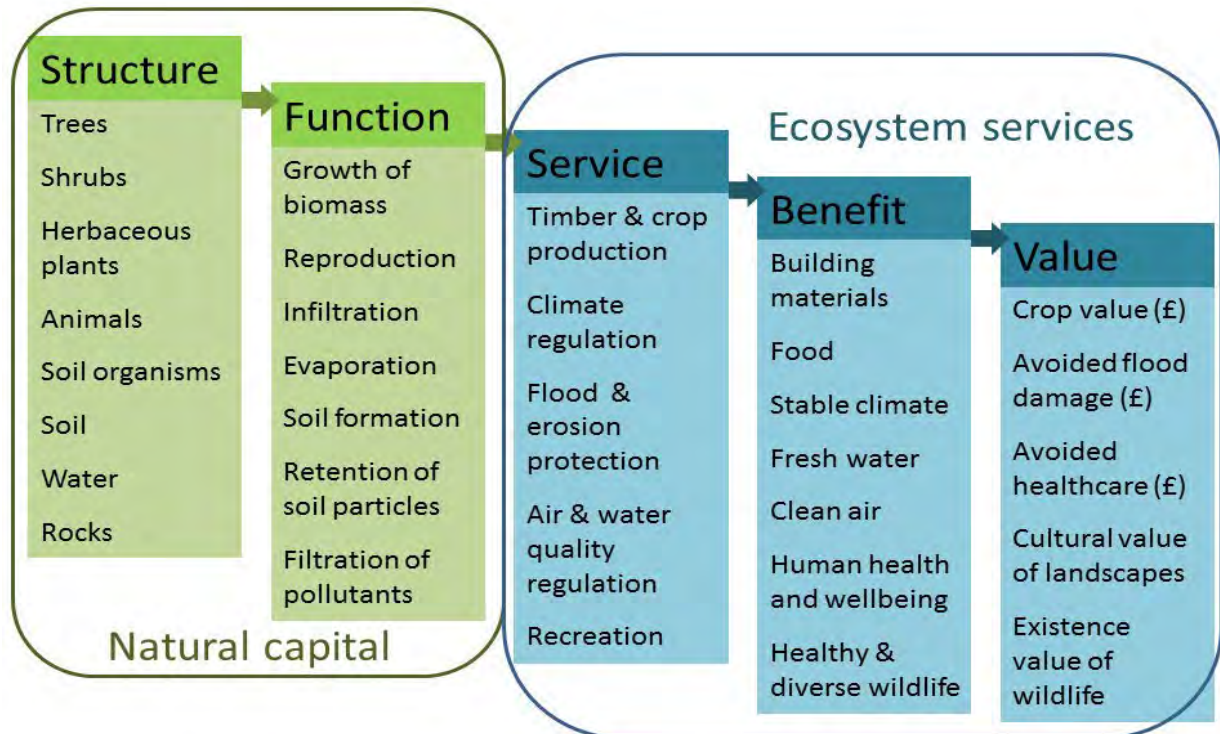
The two concepts in Table 1 can be considered as part of a 'cascade' model that links five partially overlapping concepts:

- the physical components of the ecosystem (structure), such as trees or bees,
- the functioning of and interaction between those components (process or function), such as photosynthesis,
- the delivery of a service to people, such as carbon storage or pollination,
- the resulting contribution to human welfare from the ecosystem (benefit),

² Source: http://ec.europa.eu/environment/nature/ecosystems/index_en.htm

- the value of the benefit, in monetary or non-monetary terms.

Figure 2 - The ecosystem service cascade model³. It is important to see how the concept of natural capital with its focus on stocks (structure and function) has been conceptually linked to flows (service, benefit, and value) of ecosystem services.



2.2 Why do we need a Green Infrastructure Strategy?

As discussed in Section 2.3 below, GI provides a range of social, environmental, and economic benefits (ecosystem services). These ecosystem services underpin human existence and are essential in achieving national and local priorities including improving people’s health and wellbeing; providing a healthy, biodiverse, and resilient natural environment, that helps mitigate the impacts of climate change; and in enabling economic growth.

This GI strategy provides the framework for protecting and enhancing GI within North Somerset (in order to ensure that the multiple benefits provided by GI are protected and enhanced, both now and into the future), enabling a coherent approach to policy and development management, and sustainable land management.

Green Infrastructure linked across scales, outlined below, creates ecological networks and initiates new relationships between urban and rural areas by building connectivity and resilience, reducing fragmentation and severance.

- **At the regional scale** Green Infrastructure creates a connected network of green spaces which respond sensitively to landscape character and conserve natural

³M.B. Potschin, R.H. Haines-Young Ecosystem services: exploring a geographical perspective Prog. Phys. Geogr., 35 (5) (2011), pp. 575-594

ecosystem values and functions. It provides vital services like clean water, soil for agriculture, and breathable air.

- **At the local scale** it creates green space between and around built areas. It connects communities with nature through Public Rights of Way and retains the important scenic and cultural landscapes that make a community unique.
- **In built areas** it connects public spaces like parks, streets and waterfront with surrounding landscapes. It also includes the tree canopy that keeps cities cooler in summer, adds natural beauty, helps clean the air, and reduces storm water run-off.

By protecting, reconnecting and enhancing green infrastructure, we can help ensure that a network of healthy ecosystems and semi-natural areas is managed as a coherent, multifunctional resource. It will also help ensure that ecosystems keep providing and supporting biodiversity and deliver their many vital services such as clean air and water, flood prevention, crop pollination, carbon storage, and improved health and well-being.

Simply put, the protection, enhancement and provision of GI should ensure that green spaces are bigger, better and more joined up – in accordance with the Lawton Review⁴.

2.3 Ecosystem Services (benefits)

GI provides both an approach and delivery mechanism to secure and maximise multiple benefits through a multi-functional connected network of green space and features.

As shown in Figure 2 above, the world's natural capital (natural environment) provides us with a range of ecosystem services or benefits. Ecosystems and the services they deliver underpin our very existence and wellbeing. We depend on them to produce our food and timber, regulate water supplies and climate, and breakdown waste products. Contact with nature gives pleasure, provides space for recreation and is known to have a positive impact on long-term health and happiness.

No longer are green spaces valued for a single use e.g. parks providing space for recreation, or woodland for providing timber. Contrary to single-purpose, traditional grey infrastructure (e.g. structures such as dams, seawalls, roads, pipes or water treatment plants), green infrastructure can perform a variety of vital and beneficial functions, often at the same time and at a fraction of the cost. For example, using nature based solutions such as tree planting, rain gardens and SUDs to attenuate flooding provides savings on the cost of hard infrastructure solutions as well as providing multiple benefits such as providing wildlife habitat and biodiversity, reducing soil erosion, reducing air pooling, cooling urban temperatures and providing space for informal recreation or connecting with nature.

The West of England Joint Green Infrastructure Strategy (JGIS) recognises that GI provides a wide range of evidenced economic, social and environmental benefits including:

⁴<https://webarchive.nationalarchives.gov.uk/20130402170324/http://archive.defra.gov.uk/environment/biodiversity/documents/201009space-for-nature.pdf>

- Supporting resilient ecosystems and biodiversity.
- Mitigating and adapting the natural and built environment to climate change.
- Conserving and enhancing a legible network of physical green spaces.
- Reducing and managing flood risks and drought.
- Improving mental and physical health, and the cohesion of local communities.
- Increasing the sustainability of food production
- Maintaining and enhancing cultural heritage, landscapes and natural resources.
- Promoting economic growth, employment and skills improvement.

2.3.1 Health and wellbeing benefits



Image: Poet's Walk, Clevedon⁶

People are closely connected with the natural environment. A survey by Natural England showed that in 2018 there were nearly 4 billion visits to the natural environment by adults living in England, while 89% of the respondents indicated that spending time outdoors is an important part of their life (Natural England MENE)⁵.

Natural England's recent People and Nature Survey⁷ has also revealed that during April-June 2020, almost nine in 10 adults in England reported that protection of the environment is important to them personally, and that being in nature makes them very happy. Nearly three quarters of adults were concerned about biodiversity loss in England. Four in 10 adults also reported spending more time in nature than before the coronavirus pandemic, with health and wellbeing being amongst the main reasons for getting outside.

There is increasing evidence demonstrating the benefits that the natural environment can provide to human health and wellbeing. Greenspace, such as parks, gardens, woodland, fields, Public Rights of Way and allotments as well as natural elements including green walls, roofs and incidental vegetation, are increasingly being recognised as an important asset for supporting health and wellbeing.

Improvements in health and wellbeing can also be linked to increased productivity and improved economic performance.

⁵https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/828552/Monitor_Engagement_Natural_Environment_2018_2019_v2.pdf

⁶ Photo credit: "JMGP6855" by mattbuck4950 is licensed under [CC BY-SA 2.0](https://creativecommons.org/licenses/by-sa/2.0/)

⁷ <https://www.gov.uk/government/statistics/the-people-and-nature-survey-for-england-adult-data-y1q1-april-june-2020-experimental-statistics>

The government’s 25 Year Environment Plan states that “Spending time in the natural environment – as a resident or a visitor – improves our mental health and feelings of wellbeing. It can reduce stress, fatigue, anxiety and depression. It can help boost immune systems, encourage physical activity and may reduce the risk of chronic diseases such as asthma. It can combat loneliness and bind communities together.”

A new Public Health England report⁸ highlights that Improving access to quality green space has the potential to improve health outcomes for the whole population, in a number of ways:

- Promoting health behaviour e.g. encouraging physical activity and active travel;
- Improving social contacts and giving people a sense of familiarity and belonging;
- Supporting the development of skills and capabilities; and
- Mediating potential harms posed by the local environment e.g. air pollution, heat, noise and flood risk.

This is particularly true for disadvantaged communities, where the evidence suggests that people’s health and wellbeing is enhanced by living in a greener environment. This means that green space also can be an important tool in the ambition to increase healthy life expectancy and narrow the gap between the life chances of the richest and poorest in society.

The value of green infrastructure has been keenly recognised during the COVID 19 pandemic where access to green space has played a key role in people’s well-being; alongside a wider appreciation of nature.

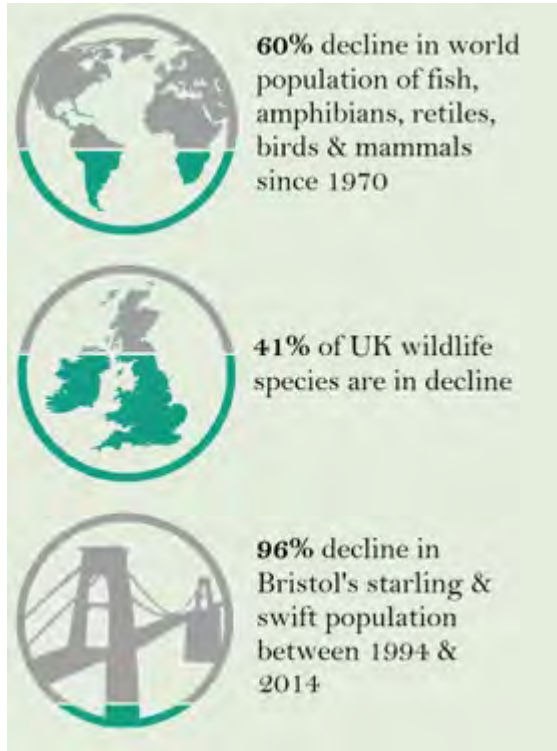
2.3.2 Tackling the climate and nature emergency

Climate change represents an urgent and potentially irreversible threat to human societies and the planet. In recognition of this, the overwhelming majority of countries around the world adopted the Paris Agreement in December 2015, the central aim of which includes pursuing efforts to limit global temperature rise to 1.5°C. The **Intergovernmental Panel on Climate Change (IPCC) Global Warming Report (2018)** provides the scientific evidence that global warming in excess of 1.5C (The Earth has already warmed by more than 1°C) above pre-industrial levels will undermine life support systems for humanity. It found that limiting global warming to 1.5°C would require “rapid and far-reaching” transitions in land, energy, industry, buildings, transport, and cities. Global net human-caused emissions of carbon dioxide (CO₂) would need to fall by about 45 percent from 2010 levels by 2030, reaching ‘net zero’ around 2050.

These pressures continue to degrade ecosystems, affecting habitats and species and reducing the spatial and functional coherence of the landscape. Degraded ecosystems have lower biodiversity and are unable to offer the same ecosystem services (benefits) as healthy ecosystems⁹.

⁸ Public Health England Report - [Improving access to greenspace: a new review for 2020](#)

⁹ <https://www.eea.europa.eu/publications/spatial-analysis-of-green-infrastructure>



The State of Nature Report (Oct 2019) and The Global Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) Report (May 2019) show the degradation and deterioration of natural environments and ecosystems which all life depends, the loss of biodiversity and a knock-on impact on human existence. The pressures that have caused the loss of biodiversity over recent decades continue to have a negative effect.

The State of Nature 2019 report highlights agricultural management, climate change, hydrological change, urbanisation, pollution, woodland management and invasive non-native species as among the most significant of pressures acting upon terrestrial and freshwater wildlife.

Key findings from The State of Nature and IPBES reports include:

- **Nature across most of the globe has now been significantly altered by multiple human drivers, with the great majority of indicators of ecosystems and biodiversity showing rapid decline - 75% of the land surface is significantly altered, 66% of the ocean area is experiencing increasing cumulative impacts, and over 85% of wetlands (area) has been lost.**
- **The population of the world's fish, amphibians, reptiles, mammals and birds has fallen by 60%.**
- **41% of insect species are threatened with extinction – meaning food chains are under threat as never before, and the three-quarters of human food crops which need insect pollination are also precarious.**
- **41% of UK wildlife species are in decline and 15% are at risk of extinction.**
- **In Bristol the city's swifts and starling populations are virtually wiped out – with a 96% decline in numbers of these birds between 1994 and 2014.**

The UK government declared an environment and climate emergency in May 2019, putting climate and the environment at the centre of government policy. The government has since made a legally binding commitment to achieve net zero emissions by 2050¹⁰, and has committed to planting 30,000 hectares of trees annually by 2025, helping to form part of the green recovery from Covid-19 and support the transition to net zero. In September 2020, the Prime Minister signed the Leaders Pledge for Nature, committing to protect 30% of the UK's

¹⁰ <https://www.gov.uk/government/news/uk-becomes-first-major-economy-to-pass-net-zero-emissions-law>

land by 2030, to protect nature and boost biodiversity, as well as committing to prioritise a green recovery following the coronavirus pandemic.

North Somerset Council is taking the issues of climate and nature seriously and declared a climate emergency in February 2019 and a nature emergency in November 2020. This has resulted in a climate emergency strategy and action plan. The ecological emergency noted specifically species extinction, loss of habitat and the connectivity of habitats, decline in pollinators which are crucial to food supply, and the loss of and decline in the quality of the soil. This GI strategy addresses these issues and demonstrates an expansion of concerns about nature that were being addressed through the ‘re-wilding’ of council owned land through planting trees and allowing grass to grow longer, in specified areas (see Section 8.2.6).

Focus on pollinators



Pollinators are essential for biodiversity and our wider environment.

They maintain the diversity of wildflowers and support healthy ecosystems, particularly by helping plants to produce fruits and seeds which birds and other animals rely on. They are not only of enormous value to crop production (and therefore vital to the UK economy) but are also valued and appreciated by the public and, as part of our natural world, contribute to our health and well-being.

In Britain around 70 crops are dependent on bees, the production being valued at over £430 million per year¹¹. They are also important to horticultural businesses, and to the public for fruit and vegetable production in allotments and gardens. However, these important insects are under threat from many pressures, including habitat loss from intensive farming, urbanisation, diseases, climate change, and pesticide use. Wildflower meadows are prime pollinator habitat, but in the UK we’ve lost 97% of them since the 1930s.



¹¹ Status and Value of Pollinators and Pollination Services, A Report to DEFRA (July 2014)
http://randd.defra.gov.uk/Document.aspx?Document=12316_finalreportph0514.pdf

Road verges are a vital refuge for pollinators and other wildlife. When managed well, road verges, whether rural or urban and whether on major or minor roads, can sustain an astonishing amount of wildlife: more pollinators are found on well-managed verges than in the neighbouring countryside and nearly 45% of our total flora is found on verges¹².

Wildflower meadows and grasslands do not only provide biodiversity and habitat for insects and other wildlife, they also provide a range of other ecosystem services, such as carbon storage; soil erosion control; flood mitigation; and space for recreation and exercise, yielding physical and mental health benefits for visitors and residents, as well as potential economic gain.

3.0 VISION, AIMS AND OBJECTIVES

3.1 Vision

North Somerset Council's overall vision set out within their Corporate Plan (2020-2024) is for 'An open, fairer, greener North Somerset'.

The Council has three overarching priorities in order to achieve this vision:

- A thriving and sustainable place
- A council which empowers and cares about people
- An open and enabling organisation

The vision for green infrastructure for North Somerset reflects these wider aims.

By 2030 our green infrastructure will be: contributing to a carbon neutral community; biodiversity will have measurably increased; health and wellbeing will be improved.

3.2 Aims

The overall aim of the Strategy is to protect and enhance GI within North Somerset, in order to maximise the multiple benefits (ecosystem services) that the natural environment provides.

The Strategy also aims to raise awareness of the importance and multiple benefits of GI and set out actions that can be undertaken by the Council, residents, businesses and partners, to protect and enhance GI.

3.3 Objectives

The West of England (WoE) Joint Green Infrastructure Strategy (JGIS) sets out 8 nature-based outcomes that are sought as part of an integrated approach to GI in the West of England.

¹²

https://www.plantlife.org.uk/application/files/3315/7063/5411/Managing_grassland_road_verges_Singles.pdf

These have been adopted as objectives for this strategy, in order to deliver the vision and aims, and are as follows:

- **Improved and better-connected ecological networks:** protect, enhance and expand coherent, thriving and resilient ecological networks that deliver net gains in biodiversity and ecosystem services, including the creation of bigger, better, more and joined-up woodland, grassland and wetland habitats to achieve the ambitions of the West of England Nature Recovery Network.
- **Greater resilience to climate change:** Provide natural solutions to build resilience against the impacts of climate change including use of well-designed Green Infrastructure to stabilise slopes and attenuate flood water, absorb carbon, and increased use of trees to reduce urban heating.
- **Sustainable water management:** Optimise and improve the use of Green Infrastructure to deliver an improved water environment by working with natural processes to help reduce flood risk, manage drought, improve water quality and improving connectivity to reduce the loss and quality of aquatic habitats and wildlife.
- **Health and wellbeing for all:** Improve the network of active travel routes and accessibility to green spaces to support healthy lifestyles and mental wellbeing and provide more opportunities for people to connect with landscape and nature and addressing inequalities in provision.
- **Create and maintain sustainable places:** New development which maximises the multiple benefits of Green Infrastructure in delivering resilient, healthy and environmentally friendly places and a net gain in natural capital by investing in Green Infrastructure for the long term.
- **Create and maintain valued healthy landscape:** Design and deliver high quality Green Infrastructure that improves local sense of place and protects and enhances landscape character and the natural, cultural and heritage services that they provide.
- **Support sustainable and local food production:** Increase opportunities for local food production in urban and rural areas and increase food sovereignty by, for example, protecting the best and most versatile agricultural land and enhancing our pollinator network.
- **Build a resilient economy:** Create attractive areas for investment and job creation and support the environmental resilience of economic sites by enhancing Green Infrastructure relating to housing, businesses and other associated infrastructure.

4.0 UNDERSTANDING THE VALUE OF GREEN INFRASTRUCTURE

4.1 Overview

The ecosystem services/benefits that the natural environment provides and are essential to our survival and health are now widely understood and evidenced. However, the management and/or provision of GI and green space is often seen as a liability, rather than an asset, and the full extent of the benefits are often unrealised. However, Natural capital accounting methodology and tools have now evolved to support decision makers and local government to understand the true value of their green estate.

This section provides an overview of natural capital accounting and highlights recent reports that have utilised it to demonstrate the benefits of GI in financial terms.

4.2 Natural Capital Accounting

Biodiversity is an essential component of natural capital and an indicator of their condition and resilience. Biodiversity itself provides benefits directly to people. At the heart of a natural capital approach is the understanding that nature underpins human health, wealth, culture, identity and happiness, and that the ways in which it does so can be complex and little understood¹³.

Valuing open space and GI using a natural capital approach puts a financial value on the often-hidden ecosystem services these natural assets provide e.g. recreation, mental health, physical health, carbon sequestration, temperature regulation, food (to name a few). It helps enable decision-makers to understand the contribution that open space and GI make to an area, or determine whether an intervention is justified, or determine priorities.

Defra's report 'Enabling a Natural Capital Approach' (ENCA) supports better environmental decision making through a better understanding of the value and evidence on natural capital and nature-based solutions. It is intended to help policy makers, businesses, landowners and public sector organisations make better planning decisions in order to protect and to boost natural capital. As such, ENCA will support more consistent valuation, although it is recognised that there are gaps in the evidence base, and that more work is needed to develop valuation evidence.

The development of a WoE Natural Capital Account has emerged as a strategic project from the preparation of the WoE Joint Green Infrastructure Strategy (JGIS) 2020-2030. NSC will be assessing options to develop a North Somerset Natural Capital Account/Strategy.

Some examples of recent reports that highlight the financial value of parks and green spaces are provided below.

¹³ <https://naturalcapitalcoalition.org/natural-capital-2/>

Making Parks Count (The Parks Alliance (TPA), 2020)

This report makes the business case for parks, why they matter, and why they are a ‘smart investment’. It illustrates how parks in England deliver over £6.6bn of health, climate change and environmental benefits each year including £2.2bn in avoided health costs alone and worth £140 per year for each urban resident. For every £1 spent on parks in England an estimated £7 in additional value for health and wellbeing and the environment is generated.

Some of the other key figures referenced in the report are:

- Urban green spaces raise house prices by an average of £2,500;
- London’s parks alone help avoid an estimated £370m of mental health related costs each year;
- Parks are among the most species rich types of urban green spaces, and over 1,500 species of UK’s pollinators deliver an estimated £680m in value to the economy;
- The benefits of air pollutant removal by trees in public parks in England is estimated at £60m per year;
- The value of carbon sequestration by trees in public parks in England is estimates at £9m per year;
- Parks in England provide an urban cooling benefit of £4.8m per year.

Revaluing Parks and Green Spaces Measuring their economic and wellbeing value to individuals (Fields in Trust (FIT), 2018)

This report provides a robust economic valuation of parks and green spaces in the UK as well as valuing improvements in health and wellbeing associated with their frequent use. This is the first research study on parks and green spaces to use welfare weighting methodology, allowing for more informed evidence-based policy decisions. The headline findings from this report are as follows:

The Total Economic Value to an individual is £30.24 per year (£2.52 per month), and includes benefits gained from using their local park or green space and non-use benefits such as the preservation of parks for future generations. The value of parks and green spaces is higher for individuals from lower socio-economic groups and also from black and minority ethnic backgrounds. The findings show that any loss of parks and green spaces will disproportionately impact disadvantaged and underrepresented communities, precisely those who value them the most.

The Wellbeing Value associated with the frequent use of local parks and green spaces is worth £34.2 billion per year to the entire UK adult population.

Parks and green spaces are estimated to save the NHS around £111 million per year based solely on a reduction in GP visits and excluding any additional savings from prescribing or referrals.

Some examples of specific natural capital tools are provided at Appendix 7.

5.0 PLANNING FOR GOOD QUALITY GREEN INFRASTRUCTURE

5.1 Overview

Although the multiple benefits of delivering GI and nature-based solutions are now widely evidenced and recognised across the planning, nature conservation and health sectors, poor quality GI can be delivered as part of new development.

The report *Living with beauty: Promoting health, wellbeing and sustainable growth* (2020), published by the Building Better, Building Beautiful Commission, recommends to government how to promote and increase the use of high-quality design for new build homes and neighbourhoods, of which nature/green space is a key part.

Recent and emerging quality standards for GI are coming forward, and these are summarised below.

5.2 Building with Nature



Building with Nature¹⁴ provides a framework of quality standards to ensure the design and delivery of high-quality green infrastructure, so that developments will also deliver for the natural world and healthy communities.

Drawing from evidence and good practice, high quality green infrastructure has been defined at each stage of the development process, from planning and design, through to long-term management and maintenance. The standards enable nature friendly features to be integrated throughout the development.

Developers can apply to have their scheme assessed, and planners can have their policy document accredited by Building with Nature. The standards¹⁵ are also free to use and can assist with the planning and development of new places and communities.

The framework of standards is divided into four themes:

- **Core** – provides a multifunctional network which responds to local context and policy, and is climate resilient and future proof;
- **Wellbeing** – is accessible, inclusive, can be enjoyed all year, is locally relevant, socially sustainable and distinctive;
- **Water** – manages water quantity and quality, maximising opportunities for amenity and biodiversity, is innovative, resilient, and locally distinctive;
- **Wildlife** – provides bigger, better, more joined up spaces that are locally relevant, nature rich and provide ecological networks.

¹⁴ <https://www.buildingwithnature.org.uk/about>

¹⁵ <https://www.buildingwithnature.org.uk/how-it-works>

NSC advocate these standards, and new major residential and commercial development will be expected to use these standards to guide the design of GI within layout plans. It is also acknowledged that new standards may also come forward as part of the National Framework of GI Standards Pilot Project (summarised below).

5.3 National Framework of GI Standards Project

Natural England's GI standards project will establish national standards for GI in England by 2022. North Somerset is one of 12 Natural England pilot projects.

The aims of the Green Infrastructure Standards Project are to:

- Enable the delivery of more green infrastructure in accordance with best practice.
- Enhance the stewardship of existing GI to increase its benefits and outcomes for people, places and nature.
- Aid national recovery from the Covid-19 pandemic. Ensure good quality green infrastructure is available to all;
- Mainstream GI as essential infrastructure in place-making and in associated planning and land use decisions;
- Embed the framework within national planning policy and guidance.
- Support local authorities in assessing their GI against the Framework of GI standards.

The framework is currently in the draft phase, but will comprise:

- **Principles of good green infrastructure**, which cover why and how to enable green infrastructure in accordance with best practice
- **Standards for green infrastructure**. These are still under development but are likely to include updated Accessible Natural Greenspace Standards and Urban Greening Factors;
- **National baseline maps of green infrastructure** with reference to key population and socio-economic data. These will show where improvements to the extent and quality of green infrastructure are likely to have greatest benefit.
- **Guidance**
 - How to self-assess against the principles of good green infrastructure;
 - How to apply the Framework of GI Standards- Process maps for planners, developers, local communities, and greenspace managers;
 - How to design GI – an evidence-based GI design guide (subject to resources).

6.0 POLICY CONTEXT

6.1 Overview

A review of the most relevant national, regional and local policy and strategy is provided at Appendix 2. This section provides a list of the documents reviewed.

6.2 National context

- National Planning Policy Framework (NPPF) (February 2019)
- The Natural Environment White Paper (NEWP) The Natural Choice: securing the value of nature (2011)
- Biodiversity 2020: A strategy for England’s wildlife and ecosystem services (August 2011)
- A Green Future: Our 25 Year Plan to Improve the Environment (2018)
- Pollinator Strategy (2014)
- Buglife and B-lines

6.3 Regional context

- The West of England Nature Partnership (WENP) and Nature Recovery Network (NRN)
- West of England Nature Partnership (WENP) Greenspace Classification
- West of England (WoE) Joint Green Infrastructure Strategy (JGIS) 2020-2030
- West of England Local Cycling and Walking Plan 2020-2036
- Joint Transport Plan 4 – West of England 2020-2036
- West of England Local Enterprise Partnership and Local Industrial Strategy
- Severn Estuary Partnership and Strategy for the Severn Estuary 2017
- Mendip Hills AONB Partnership and Management Plan 2019 - 2024
- Forest of Avon Trust Emerging Tree and Woodland Strategy
- The Bristol Avon Catchment Partnership (BACP) and Bristol Avon Catchment Plan 2016.

6.4 Local context

- NSC Corporate Plan (2020 – 2024)
- Emerging Local Plan (2023-2038)
- Existing Local Plan
 - *NSC Core Strategy (January 2017)*
 - *NSC Development Management Policies – Sites and Policies Plan Part 1 (July 2016)*
 - *North Somerset Council Site Allocations Plan 2018*
 - *North Somerset and Mendip Bats Special Area of Conservation (SAC) Guidance on Development SPD (January 2018)*

- *Development Contributions Supplementary Planning Document (SPD) (January 2016)*
- *Biodiversity and Trees SPD (December 2005)*
- North Somerset climate emergency strategy and action plan
- Rights of Way Improvement Plan (2007-2017)
- North Somerset’s Economic Plan (2017-2036)
- Placemaking Strategy for Weston-super-Mare
- NSC Strategic Flood Risk Assessment

6.5 Conclusions

The policy and strategy review highlights the vital importance of multi-functional green infrastructure in tackling the nature and climate emergency and in improving health and wellbeing, as well as being fundamental to the aims of national, regional and local strategies and policy, supporting diverse policy priorities.

A brief summary of some the key strengths, weaknesses, opportunities and challenges for GI in North Somerset is provided below (Table 2). These have emerged from the policy and strategy review (Appendix 2), and consultation within North Somerset Council (see Appendix 1).

Table 2 - SWOC overview for GI in North Somerset

Strengths	Weaknesses
<ul style="list-style-type: none"> • A rich natural environment with a diversity of habitats supporting a variety of flora and fauna. • Varied landscape with a rich heritage • Collaborative working with partners including the West of England. • Good planning policy which can be strengthened further. • Many well-maintained open spaces which have achieved green flag awards • A good network of PROW provides many routes for walking, cycling and horse-riding. • Attractive tourist destination • Re-wilding campaign on NSC land 	<ul style="list-style-type: none"> • Some planning policy evidence bases are out of date, such as the evidence base for open space standards/provision. • Insufficient staff capacity to take advantage of grant funding opportunities.
Challenges	Opportunities
<ul style="list-style-type: none"> • Resources and funding e.g. to deliver projects and improvements, such as identifying sites with potential to be restored to priority habitats. • Management of existing designated sites (both statutory and non-statutory) to maintain and restore healthy and resilient habitats that continue to foster biodiversity. • Deprivation/inequalities, especially in WsM • Ensuring well designed, sustainable development in the right places • Ensuring sustainable tourism • Ensuring sustainable and green transport networks, which provide improved connectivity and access for other users of the network such as those with disabilities, and equestrians. • Improving water quality • Incentivising and supporting sustainable land management • Management of volunteers – capacity. • Practicalities of delivery and monitoring of green infrastructure provision on development sites 	<ul style="list-style-type: none"> • Adopting and promoting good quality design for GI e.g. Building with Nature to ensure quality GI as part of new development • Improve understanding the value of green space through the use of natural capital accounting tools • Strengthening GI planning policy including enshrining GI and biodiversity net gain to ensure new development provides/enhances GI • Improving awareness of the nature and climate emergency and engaging with and empowering communities, businesses and landowners etc to take positive action. • Further partnership working • Post Covid-19 response– improve green transport opportunities and access to high quality green spaces. • Lots of opportunities to transform parks and amenity green spaces through establishment of wildflower meadows, priority habitats and rewilding. • Opportunities for agricultural land to contribute positively to GI through the emerging Environmental Land Management Scheme (ELMS) or offsetting opportunities e.g. carbon, nitrates/phosphates. • GI will play a key role in our economic recovery which is green, digital and people centred

7.0 EXISTING GI IN NORTH SOMERSET

7.1 Methodology

The approach taken for identifying and assessing strategic GI provision within North Somerset was as follows:

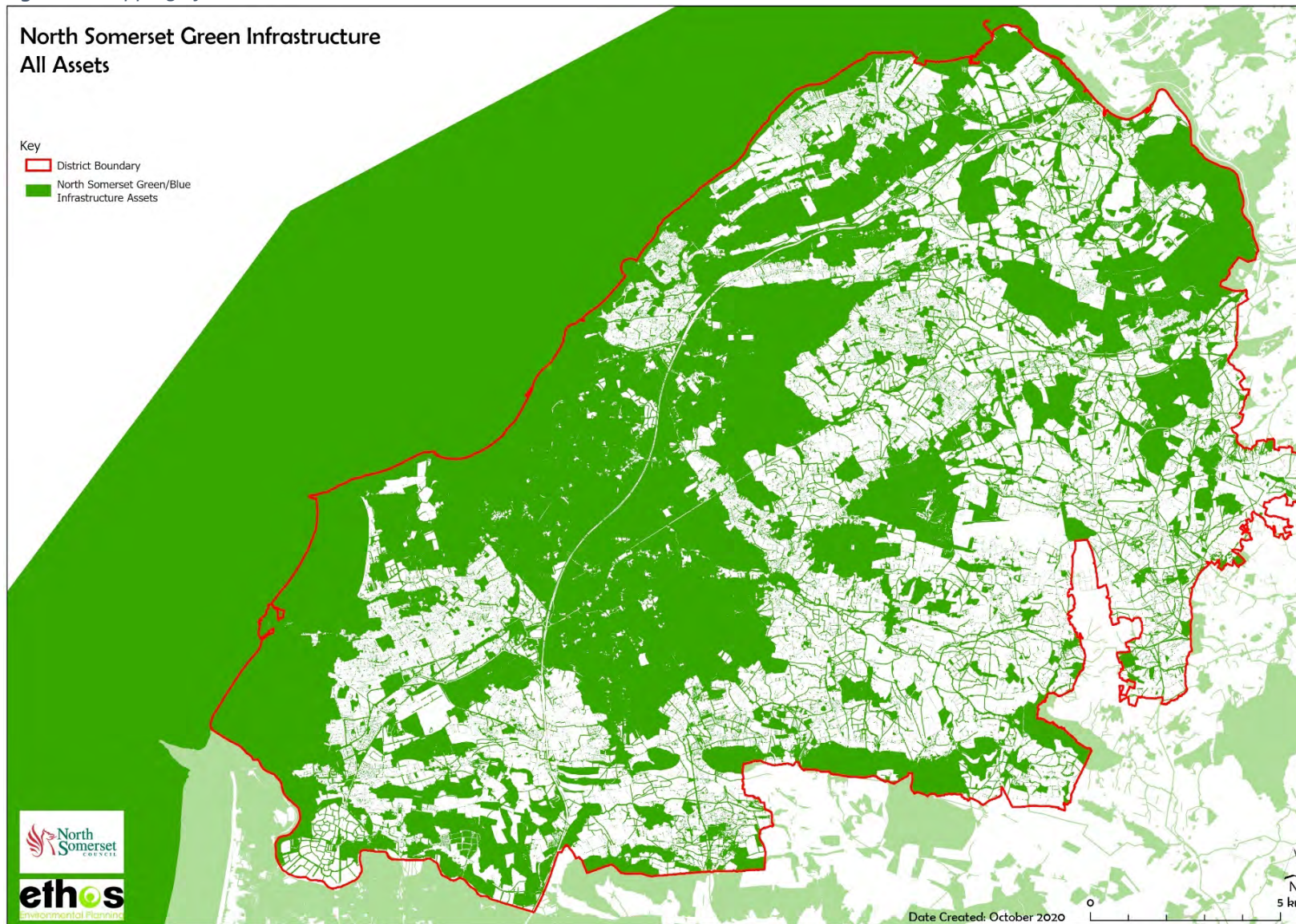
- **GIS Desktop Audit of provision:** Given that the vast majority of North Somerset is rural and therefore can be considered as green (or blue) infrastructure, the mapping of GI has focused on areas of high quality (e.g. statutory and non-statutory designated sites)/strategic GI and connectivity (rivers, major footpaths/cycleways, etc.). Maps have been produced using GIS datasets grouped into key themes, which link to the WoE JGIS outcomes (see Appendix 3).
- **Initial Consultation** with NSC's Natural Environment Team, in order to inform datasets used, as well as issues, priorities and opportunities (Appendix 1).
- **Future consultation:** the draft green infrastructure strategy will not be finalised until after an 8 week consultation period has enabled additional information to be provided
- **Policy review and research** – to set the strategic context of the Strategy and identify how the strategy can contribute to wider aims and policy priorities, as well as reviewing relevant datasets and opportunities for improvement.
- **Identification of the key GI network (assets and corridors)** – based on the GI datasets which were collated and mapped, set out in Appendix 3.
- **Opportunities for improvement (split into 3 areas - Council Land, Third Party Land and Planning and Development):**
 - Connectivity – opportunities for addressing gaps in the network for both habitats for biodiversity/wildlife and access for people (desktop analysis). Drawing on: WENP Nature Recovery Network (NRN), Natural England's Habitat Network Mapping and B-lines, a review of existing plans and strategies, and initial consultation with NSC.
 - Quality – Opportunities for quality improvements to enhance functionality of the GI network, based on existing quality information such as SSSI condition monitoring and Environment Agency WFD data.
 - Access – An assessment of access to publicly accessible open space through the application of a 300m buffer.

7.2 Strategic GI Map

Figure 3 below provides an overview of all strategic GI assets (combined from each of the GI themes) within North Somerset.

Appendix 3 provides a table of the GIS data used in the GI mapping by theme, as well as maps showing the GI broken down by theme (Water/Blue GI, Biodiversity and Habitats, Open Space and Access Routes, Food growing, Heritage and Landscape).

Figure 3 Mapping of overall GI network across North Somerset



7.3 Identification of GI Corridors

The strategic GI corridors within North Somerset have been identified in Figure 4 and Table 3 below, using the GI datasets set out in Appendix 3. Figure 5 shows how the GI network within North Somerset links to the wider area.

The strategic GI corridors are based on multifunctional corridors which fulfil wildlife, access, flood plain and landscape functions. These corridors are indicative and are based on the underlying GI asset mapping. Opportunities for improving the strategic GI network have been identified in Section 8. Both the GI corridors and opportunities for improving GI are indicative, and where they fall on private land, discussion around opportunities and partnerships would be sought. No action would be taken without first consulting with the landowner.

These corridors specifically highlight important GI networks and are not a commentary on development opportunities and are not therefore designed to preclude development. They do, however, highlight that in some locations green infrastructure and development will overlap and will therefore need to complement each other. For example, new development would need to recognise the strategic GI network and set out how it will contribute to protecting and enhancing it; by providing multifunctional GI which respects and enhances the character and distinctiveness of the area. This could be done, for example, by retaining and enhancing habitats and linking habitats on and off-site (especially within the Nature Recovery Network), providing and/or improving the quality of accessible open space, connecting and improving sustainable access routes, providing SuDs which manage water quantity and quality and also provide amenity and biodiversity value where possible. The strategic GI identified in Figure 3 and Figure 4 (key assets and corridors) and opportunities for improving GI identified in Section 8 and Appendix 4 are indicative and provide the framework for protecting and enhancing GI. Further work is needed to identify specific projects, through more detailed analysis of the GI mapping and opportunities for improving habitat connectivity and management.

It should also be noted that there may be additional or more localised priorities, opportunities and aspirations for protecting, creating and enhancing GI outside of this strategic network e.g. Through local community initiatives, where funding might have been secured for pond creation/restoration or tree planting, or through new development that falls outside of the strategic GI network. Any new GI or enhancements should link with the strategic GI network where possible.

Table 3 - Strategic GI corridors in North Somerset

Strategic corridor number ¹⁶	Description
1.	Key Corridor following B-Line (pollinator network project) along the south and east of the district, the southern section falling within the Mendip Hills AONB, from Manor Woods Valley LNR in Bristol through to Mendip Limestone Grasslands SSSI via Barrow Tanks LWS and Burrington Combe SSSI. This corridor picks up a number of connectivity opportunities across all typologies as identified within the NRN.
2.	Woodland corridor following the North Somerset & Mendip Bats SAC, Cadbury Hill, a number of woodland connectivity opportunities and Goblin Combe before finishing at the Ashton Plantation and Failand in the north.
3.	Corridor linking a number of LWS starting with the Severn Estuary through Portbury Wharf, Gordano Valley and Walton Common before looping back through Clevedon Court, Twickenham Hill/Cadbury Camp and Failand Ridge and ending at the River Avon. This corridor contains a mixture of woodland, wetland and grassland.
4.	Floodplain grazing marsh corridor starting in the B-Line to the south and a number of traditional orchards in Churchill, passing through a grassland connectivity opportunity and taking in the key moors before finishing in the orchards of Tickenham.
5.	Severn Estuary Corridor covering the coastal stretch of the district.
6.	Congresbury Yeo Corridor following NRN's strategic wetland network from Severn Estuary to Blagdon Lake SSSI, passing a number of traditional orchards. The corridor is primarily coastal floodplain grazing marsh west of Congresbury village and grassland and deciduous woodland east of the village. This corridor takes in a number of wetland connectivity opportunities as identified in the NRN analysis.
7.	River Axe and Lox Yeo River Corridor within B-Line. Originating at Uphill LNR and finishing at Max Bog SSSI.
8.	River Banwell Corridor linking Banwell Wood (which includes North Somerset & Mendip SAC) in the east to Severn Estuary. This follows the NRN's strategic wetland network.
9.	Corridor following Uphill Great Rhyne to the west via public open spaces and orchards in Locking Castle to the Rhynes at Tickenham, Nailsea and Kenn Moors SSSI.
10.	Predominantly wetland corridor following NRN's strategic wetland network linking Severn Estuary through floodplain grazing marsh through Nailsea and Tickenham Moors and taking in some traditional orchards.
11.	Corridor connecting Tickenham, Nailsea and Kenn Moors to Bucklands Pool/Backwell Lake LNR via traditional orchards and grassland LWS.
12.	River Avon Corridor following strategic wetland from the NRN in addition to woodland and following a B-Line. This important corridor contains the Avon Gorge SSSI and Leigh Woods LWS.
13.	Land Yeo river Corridor starting in the B-Line to the East at Ashton Vale and following the Land Yeo and Blind Yeo to the Severn; both of these rivers have a number of wetland connectivity opportunity spots.

¹⁶ Indicated on Figure 4 below.

Figure 4 Strategic GI Corridors in North Somerset

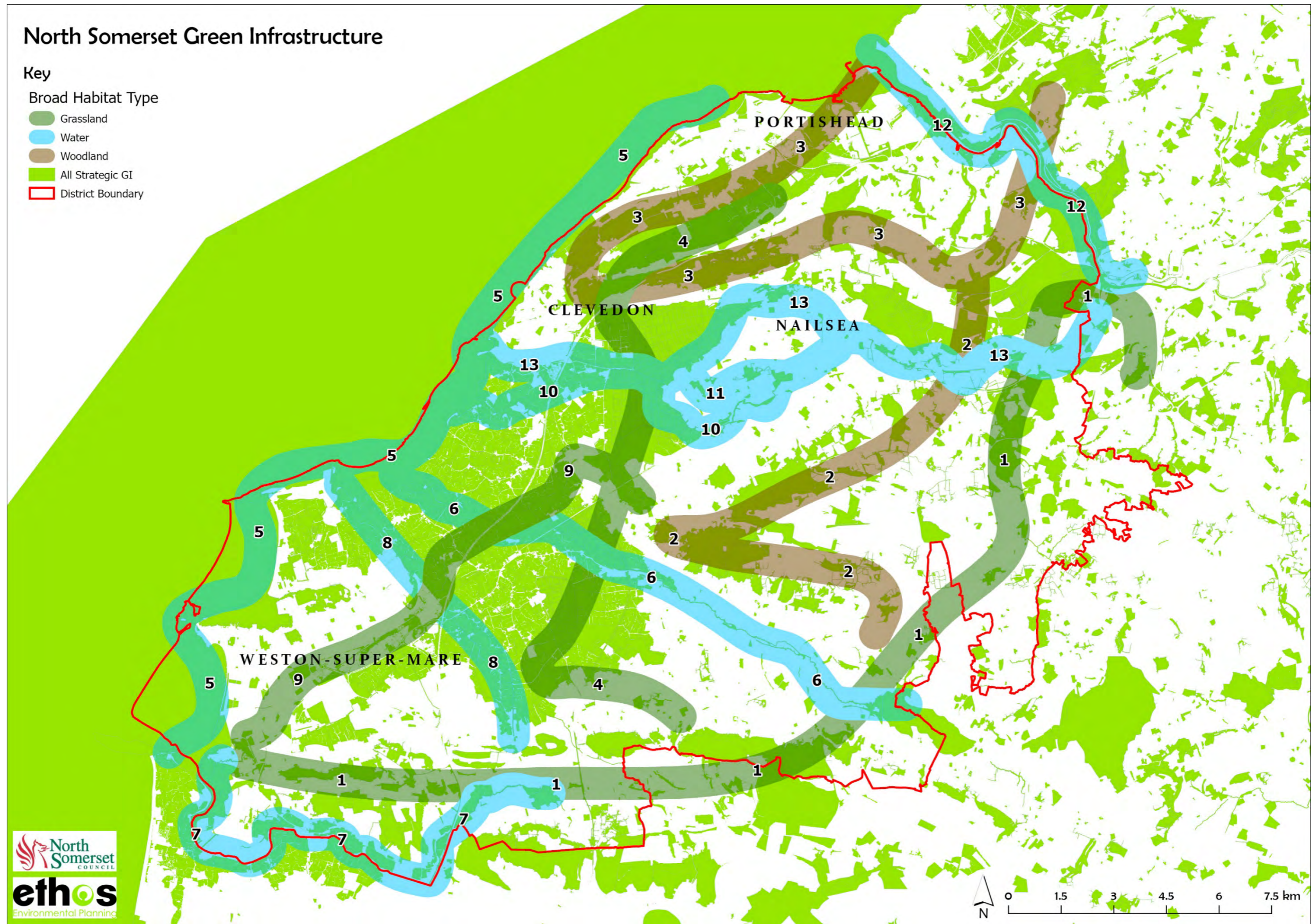
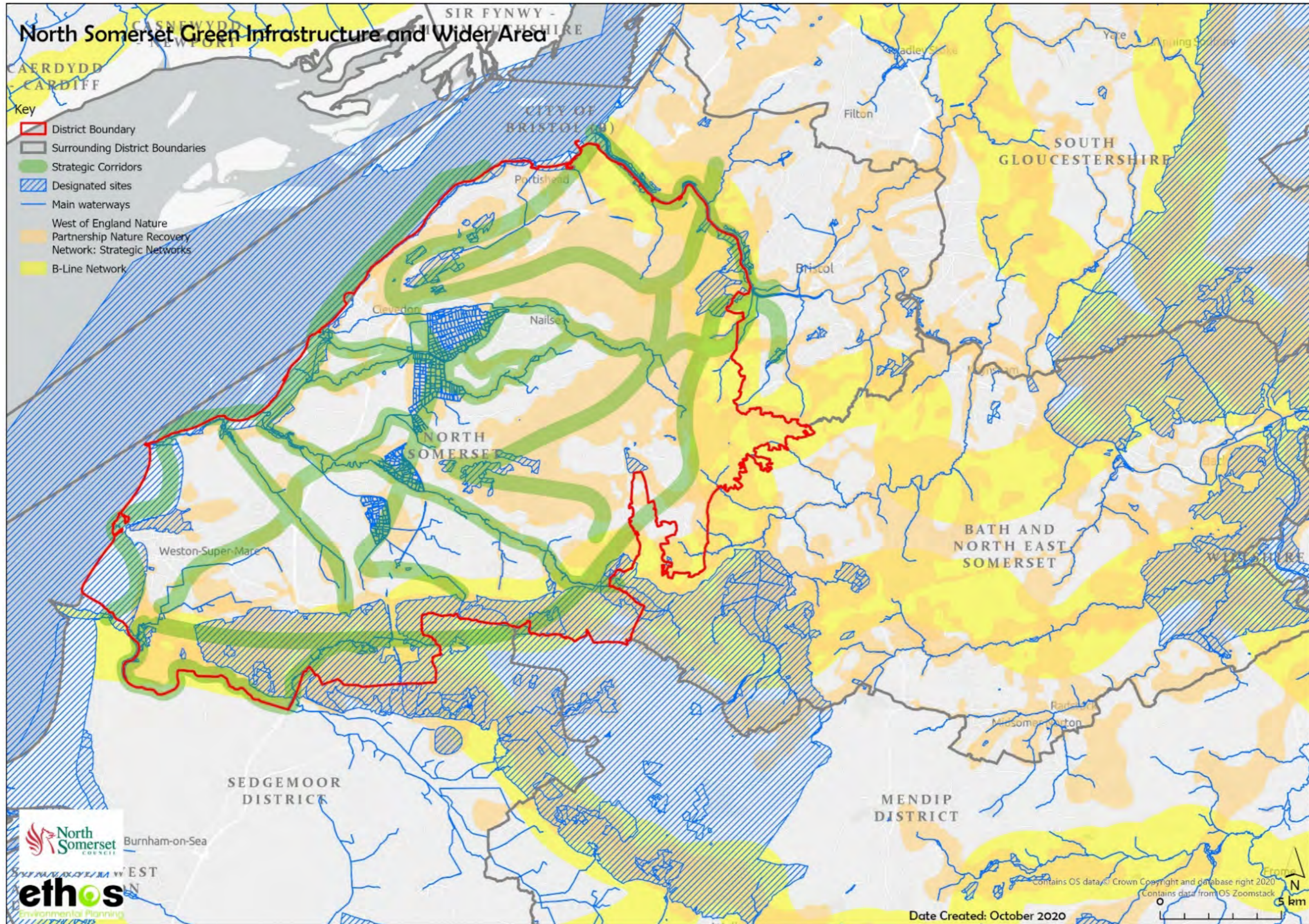


Figure 5- Strategic GI corridors and links with wider area/bordering Local Authorities



8.0 OPPORTUNITIES & RECOMMENDATIONS FOR IMPROVING GI

8.1 Overview

This section sets out broad opportunities and recommendations for improving the GI within North Somerset (both within and outside of the strategic GI network) and considers opportunities across 3 main areas – Council Land; Third Party Land; and Planning and Development, which includes planning policy recommendations.

GI is a nature-based solution

Opportunities to protect, enhance and create (improve) new GI can be called ‘nature-based solutions’.

‘Nature-based solutions’ is a term that encompasses GI and can be used to describe alternative and non-traditional approaches to environmental issues, like flooding, water scarcity, or soil erosion, by harnessing natural capital. The International Union for Conservation of Nature (IUCN) defines nature-based solutions as “actions to protect, sustainably manage, and restore natural or modified ecosystems, that address societal challenges effectively and adaptively, simultaneously providing human well-being and biodiversity benefits”.

GI and nature-based solutions have huge potential to help cities and urban areas become more resilient to climate change, and benefit people’s health and the economy.

Nature-based solutions are focused on six key areas¹⁷:

- Urban trees – found in parks, gardens, and along streets, trees can help to regulate urban temperatures, reduce flood risk, and clean the air
- Parks and green spaces – natural or planted green spaces are used for recreation and exercise, as well as being rich habitats for wildlife
- Public Rights of Way – Used for recreation and exercise, enable all to enjoy the natural environment and wildlife
- Green buildings – walls and roofs covered with vegetation act like sound and heat insulation for buildings, and absorb rainwater, so reducing flood risk
- Riverbank vegetation – plants along riverbanks trap soil and sediment, improving water quality and reducing flood damage by slowing the flow of water
- Wetland and bioswales – natural wetlands and man-made bioswales (or ‘rain gardens’) help to purify water and reduce flooding
- Lakes and ponds – natural or artificial waterbodies in cities can hold water for irrigation or drinking and support a wide range of wildlife.

¹⁷ <https://earthwatch.org.uk/working-with-business/climate-proof-cities>

Other solutions to improve the natural environment, such as the Nature Recovery Network, or re-wilding (see below) are also examples of nature-based solutions.

The Nature Recovery Network (NRN) as the basis for identifying opportunities for improvement

The NRN is a key policy commitment in the 25 Year Environment Plan. The NRN will benefit people and wildlife by increasing, improving and joining-up wildlife-rich places across England. It will create or restore 500,000 hectares of wildlife habitat outside protected sites, more effectively linking existing protected sites and landscapes, as well as urban green infrastructure, and providing opportunities to re-introduce species that have been lost from the countryside.

The forthcoming Environment Bill (2020) will place the 25 Year Environment Plan on statutory footing. A key outcome from this will include a requirement for all areas in England to establish Local Nature Recovery Strategies (LNRSs), as well as mandating biodiversity net gain¹⁸ (also see section 8.4.5).

The West of England Nature Partnership (WENP) is working to develop a regional Nature Recovery Network (NRN) for the West of England¹⁹, aligning with shared principles developed across the South West (by the South West Local Nature Partnerships) to ensure coherence and strengthened networks across the wider region.

WENP's proposed NRN map, has been used as the basis for identifying key GI assets and corridors, and opportunities for increasing the connectivity of habitats (set out in Section 8.3 and Appendix 4).

Re-wilding

Rewilding is the large-scale restoration of ecosystems where nature can take care of itself. It seeks to reinstate natural processes and, where appropriate, missing species – allowing them to shape the landscape and the habitats within.

By protecting, restoring and regenerating species-rich mosaics of habitats, rewilding helps reverse biodiversity loss and bring back the abundance of wildlife, as well as helping to mitigate against climate change, improving health and wellbeing and providing opportunities for communities to diversify and create more resilient, nature-based economies.

The Charity Rewilding Britain wants to see a mosaic of species-rich habitats restored and connected across at least 30% of Britain's land and sea by 2030, through expanding the scale, quality *and* connectivity of our native habitats.

An example of a hugely successful re-wilding project is the Knepp Estate²⁰ in West Sussex. Since 2001, the land, which was once intensively farmed, has been devoted to a pioneering

¹⁸ Biodiversity Net Gain (BNG) is defined as 'a goal for a development project in which biodiversity losses are avoided, minimised, compensated and then exceeded by gains for biodiversity'.

¹⁹ <https://www.wenp.org.uk/nature-recovery-network/>

²⁰ <https://knepp.co.uk/home>

rewilding project. Using grazing animals as the drivers of habitat creation, and with the restoration of dynamic, natural water courses, the project has seen extraordinary increases in wildlife. Rare species such as turtle doves, nightingales, peregrine falcons and purple emperor butterflies are now breeding on the land. In partnership with a number of conservation organisations and private landowners, Knepp has embarked on a project to re-establish a breeding population of White Storks – with the first chicks hatching in 2020.

8.2 Opportunities on Council Land

8.2.1 Management of road verges (both highway land and in residential areas)



Road verges are a vital refuge for pollinators and other wildlife. North Somerset Council has started a programme of rewilding including the planting of 50,000 trees and changing its mowing regime on 40 hectares of amenity grass to create more biodiverse areas of ‘tall grass’. These changes will sustain an astonishing amount of wildlife: more pollinators are found on well-managed verges than in the neighbouring countryside and nearly 45% of our total flora is found on verges²¹. They also have the potential to form ‘pollinator highways’ linking many other habitats together.

Although Plantlife acknowledge that using seed mixes to create wildflower habitats have an important role to play, particularly in urban areas, the most effective way to tackle the real problem of declining local plant diversity and habitat degradation is through the way the land is managed²².

The Council has introduced signage to identify where land is being managed for biodiversity – and we have been using the blue heart used as part of the BLUE campaign²³ (pictured above).

²¹

https://www.plantlife.org.uk/application/files/3315/7063/5411/Managing_grassland_road_verges_Singles.pdf

²² Plantlife Report: Keeping the Wild in Wildflower <https://www.plantlife.org.uk/uk/our-work/campaigning-change/keeping-wild-wildflower>

²³ <https://bluecampaignhub.com/>



Introducing **yellow rattle** (*Rhinanthus minor*), which is semi-parasitic to grasses, can reduce the quantity of grass growth by 60-80% – so reducing the frequency of cuts and the quantity of cuttings to remove – and also creates space for other wildflowers to grow, directly increasing diversity of the verge. Yellow rattle is best introduced onto moderate or low-fertility soils after reinstating favourable management. Once yellow rattle has established and is reducing grass growth, seeds of other wildflowers can be introduced if none have appeared naturally from the soil seed bank.

We have also recognised the importance of consulting with local residents and this will continue with future rewilding activities.

Managing road verges and open spaces for biodiversity and pollinators will require a balance between nature conservation, safety, management costs, existing contractual obligations, and public demand for tidiness.

***Recommendation 1:** NSC to consult on expanding rewilding management regimes (e.g. along roadside verges (highway and residential) in order to increase biodiversity. There could be potential for income through the land holding delivering biodiversity net gain (BNG) units, to offset biodiversity loss from new development (See Section 8.4.5 for further info on BNG).*

8.2.2 Management of open space

In public open space and recreation spaces there must be a careful balance between the needs of people and wildlife. However, research has suggested that people respond better to more ‘biodiverse’ greenspaces²⁴, meaning that the two objectives are not mutually exclusive. Simple actions such as the provision of wildflower strips or areas, the planting of shrubs and trees, and small semi-natural patches that are left to grow wild can provide space for nature in public spaces without removing their amenity value. Community food growing projects, such as community orchards and edible beds within open spaces can also help generate community support, as well as benefit biodiversity.

²⁴ Cameron, R.W.F., Brindley, P., Mears, M. et al. Where the wild things are! Do urban greenspaces with greater avian biodiversity promote more positive emotions in humans?. *Urban Ecosyst* 23, 301–317 (2020).

As with management of road verges, any changes to existing management regimes or planting/wildflower meadow creation should involve the community. An important element of engagement will be to manage expectations around what ‘true’ wildflower meadows look like, but also the biodiversity benefits of this type of meadow compared to cornfield annuals (seed mixtures composed of annual flower species which can grow on fertile land).

Improvements in the provision, accessibility, quality and management of NSC parks and open spaces could be co-ordinated through the production of a Parks and Open Space Strategy.

***Recommendation 2:** In addition to rolling out the NSC ‘re-wilding’ project, the Council will consult further to identify additional opportunities to improve the biodiversity value of their parks and green spaces. In accordance with the UK governments commitment to protect 30% of the UK’s land by 2030 for nature and biodiversity, NSC should also aim to manage at least 30% of its land holding for biodiversity. This could be co-ordinated through a Parks and Open Space Strategy.*

8.2.3 Pesticide usage

An important aspect of improving biodiversity and habitat for insects and pollinators is reducing pesticide usage²⁵. The 25 Year Environment Plan set out that we must be more sustainable with minimal use of pesticides but does not set a target or strategy to achieve it. There is growing evidence and awareness of the damage that pesticides (particularly neonicotinoids) can cause to our pollinators. Countries such as France have set ambitious targets for reducing their pesticide usage, and a movement that started there to help change people’s perception of weeds is growing, where botanists chalk pavements with the names of the wild plants.



Photo: Jill Mead (The Guardian Newspaper), From the article ‘Not just weeds’

Recommendation 3: The Council will trial reducing its pesticide usage and/or going pesticide free in some areas. This could be done alongside a public

²⁵ Pesticides are substances that are meant to control pests, including weeds (includes herbicides, insecticides, and fungicides).

consultation and trial pavement chalking with local botanists, to raise awareness and gather resident’s views on the matter.

8.2.4 Tree Planting

The 25 Year Environment Plan states that the provision of more and better-quality green infrastructure including urban and suburban trees – will make towns and cities attractive places to live and work and bring about key long-term improvements in people’s health. The governments manifesto sets an ambition to see all new streets lined with trees, and they wish to see more trees planted in urban and suburban areas overall.

Trees provide services such as cooling the air and providing shade, improving our health and wellbeing and make more attractive places for us to live, travel and work. Evidence shows that these benefits can also lead to wider economic gains, for example reducing costs associated with flood damage and potential increases in the values of properties.

When deciding where to plant individual trees or woodlands, consideration needs to be given to the space available and proximity to buildings, the tree species and also the suitability of the land. Tree planting must not take place on archaeological sites, and important habitats such species rich grassland, heathland, wetland or peat bogs for example. Residents and local wildlife groups etc. should be consulted in order to make sure tree planting takes place in suitable locations and so that tree planting projects have community support.

Tiny Forests/Miyawaki Forests



Mimicking native woodland, these small (can be as small as a tennis court), fast-growing, and dense forests are ideal for urban areas where space is limited.

Despite their small size, they deliver significant tangible benefits, including flood mitigation, improved air quality, noise reduction near busy roads, havens for wildlife, and spaces for people to connect with nature. Tiny Forests provide an innovative, nature-based solution to the challenge

of the climate and biodiversity crisis.

The UK’s first Tiny Forest is based on a forest management methodology developed in the 1970s by Japanese botanist Dr Akira Miyawaki and was planted by environmental charity Earthwatch Europe and Witney Town Council in Oxfordshire, in March 2020. The charity is seeking other visionary sponsors and landowners to help bring hundreds more Tiny Forests to the UK.

Recommendation 4: *In addition to rolling out the NSC ‘re-wilding’ project, consideration should be given to additional tree planting opportunities on Council land through consulting with local groups and residents. This could include street*

tree planting, allowing areas of natural regeneration, individual trees, new woodland, 'Tiny forests', and community orchards.

8.2.5 General 'greening' opportunities

Highly urbanised environments where there is little in the way of existing trees, green verges or open space probably present the biggest challenge in terms of bringing biodiversity into these areas. Some examples of innovative ways of 'greening' these urban areas for the benefit of pollinators other wildlife and people are provided below.



Parklet in Hammersmith and Fulham



Living bus shelter in Eindhoven



Green roof bus stop in Utrecht



Drapers Garden green wall in London

Parklets: Parklets are parking spaces that have been transformed into a community space e.g. with benches, seats, planters, etc. They challenge the idea that kerbside space is only for car storage. A residential parklet can be used both as a resting point for people, and a play area for children²⁶. They can also help green the city and provide food for pollinators, help attenuate rainwater, and provide shade/cool the air.

Green roofs and walls: Green roofs fall into two main categories: intensive and extensive. Extensive green roofs usually have a thin layer of soil medium and plants like succulents, grasses or other low maintenance, low growing vegetation. They require little to no maintenance and are usually not accessible. Intensive green roofs typically have a deeper

²⁶ <https://www.livingstreets.org.uk/about-us/our-work-in-action/campaigning-for-parklets>

substrate and shrubby vegetation or even trees. They are usually accessible and can often take the shape of a garden, which also means they require more maintenance than extensive roofs.

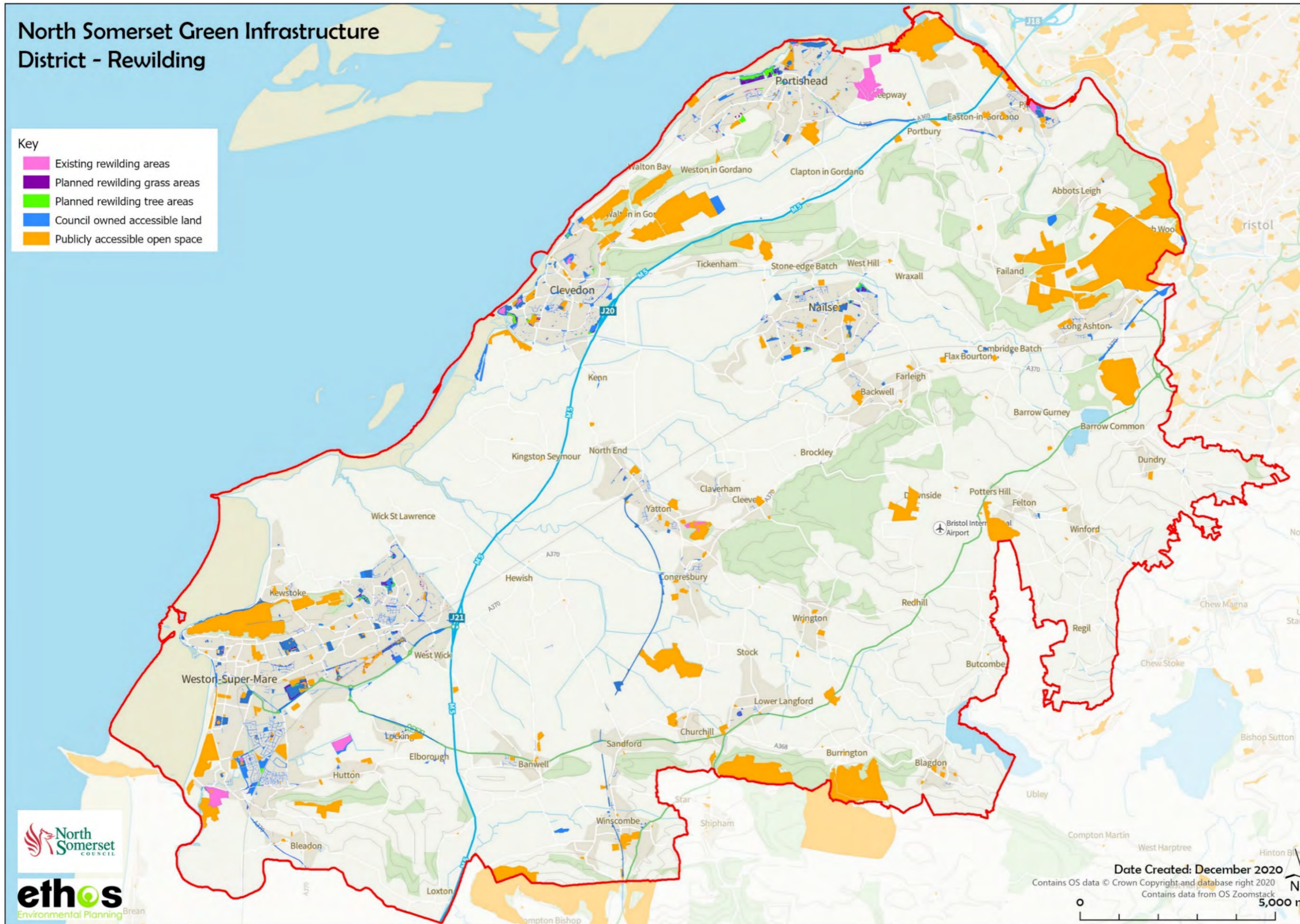
By intercepting precipitation and allowing infiltration into the soil media (as well as evaporation and transpiration from plants), green roofs reduce the impermeable surface of an area. They are most effective in small to medium rainfall events with low intensities and longer durations. Green roofs can also improve health and wellbeing by reducing air temperature and improving air quality in urban areas, and they can provide valuable habitat for wildlife including pollinators.

Extensive green roofs can be created on any small flat roof, whether on a shed or a bus-stop. It is also becoming increasingly common for urban spaces to be ‘greened’ by creating living or ‘green’ walls which are covered with plants.

***Recommendation 5:** Within the main towns of Weston super Mare, Clevedon, Portishead and Nailsea, opportunities for ‘greening the grey’ should be considered and incorporated into relevant projects, plans and strategies, in order to improve health and wellbeing and help adapt to climate change. Planning policy within the Council’s new local plan should require green roofs, walls and tree planting in built up areas where the opportunities to provide new open space is limited.*

8.2.6 NSC 'Re-wilding' project

Figure 6 NSC existing and planned 're-wilding' areas



The council are in the process of converting 25% of 2,500,00 m² of amenity (short mown) grassland into woodland and managed tall grassland for biodiversity. Figure 6 above provides an overview of the existing and planned ‘re-wilding’ areas, with more detailed maps provided at Appendix 5.

NSC are planting approximately 50,000 young trees across North Somerset. The first 5000 were planted in February 2020, and the remainder will be planted during the winter over 2020/21 and 2021/22.

Tall grass will be allowed to grow in some areas, providing shelter and food for insects, including pollinators. Most of this grass will be cut at the end of the flowering season, usually between August and October. The cuttings will be left on site, and the grass may be cut again in the spring, if needed, for biodiversity purposes. Some of the tall grass areas may be allowed to develop into scrub which provides food and nesting opportunities for birds. If left long enough, this will develop into woodland through natural succession.

Areas for retaining, improving and creating wildflower meadows will also be considered. Again, these areas will be cut at the end of the flowering season, and the cuttings removed to provide the conditions required for wildflowers to flourish (which can take a number of years in areas that are being restored or created). All new tall grass areas will be established by 2022.

Recommendation 6: Remaining ‘re-wilding’ areas will be rolled out following assessment of existing habitat, in order to calculate biodiversity net gain (BNG) units for habitat banking (see Section 8.4.5 on BNG).

8.2.7 Access to open space

Access to open space which includes council owned and non-council owned publicly accessible open space is considered in Section 8.3.3 below.

8.3 Third Party Land

8.3.1 Water/Blue GI

Wetland habitats (which include rivers, streams, floodplains, estuaries, lakes, ponds, ditches, wet grasslands, marshes, mud flats, peat bogs, fens, wet woodlands and reedbeds) are some of the most important habitats for people and wildlife, yet they are also some of the most threatened habitats in the world. In the UK we’ve lost 90% of our wetland habitats in the last 100 years and over 10% of our freshwater and wetland species are threatened with extinction²⁷.

²⁷ https://consult.environment-agency.gov.uk/++preview++/environment-and-business/challenges-and-choices/user_uploads/biodiversity-challenge-rbmp-2021.pdf

Wetlands are one of the world's most biodiverse habitats, they absorb and store carbon, they are a lifeline for freshwater species, they provide habitat for migrating species such as wildfowl and waders, they are good for our health and wellbeing (e.g. through connection with nature and the use of wetland plants in medicine), they can provide protection from flooding, as well as slowly releasing water when levels are low, they can help cool temperatures, they are essential for clean water, and they provide sustenance and livelihoods e.g. through fishing, aquaculture and rice production.

WETLAND HABITATS SUCH AS PEATLAND AND SALTMARSH ARE VITALLY IMPORTANT IN MITIGATING CLIMATE CHANGE. THE SEVERN ESTUARY REPRESENTS THE LARGEST AGGREGATION OF SALT MARSH HABITAT IN THE SOUTH AND SOUTHWEST OF THE UK, COVERING ABOUT 1,400 HECTARES. ON AVERAGE, 1 HECTARE OF SALTMARSH SEQUESTERS AND STORES ABOUT 21KG OF CARBON DIOXIDE PER DAY²⁸.

Some of the key pressures on these habitats are: climate change; physical modification; pressures from rural land management and agriculture; pollution from wastewater discharged from water treatment works; pollution from rural areas, towns, cities and transport; changes to water levels and flows; invasive non-native species; and habitat fragmentation.

THE AVON WILDLIFE TRUST (AWT) ARE WORKING TO RESTORE WETLAND HABITAT WITHIN THE GORDANO VALLEY, IN ORDER TO ENCOURAGE LAPWINGS BACK TO LIVE AND BREED. LAPWINGS ON THE UK'S RED LIST AS A SPECIES OF CONSERVATION CONCERN, AND ACROSS AVON, THEIR NUMBERS HAVE FALLEN BY 88% IN THE LAST 25 YEARS. THE PROJECT, FUNDED BY A GRANT FROM BIFFA AWARD AS PART OF THE LANDFILL COMMUNITIES FUND IN 2018, IS ENABLING AWT CONSERVATION STAFF AND VOLUNTEERS TO RESTORE 80HA OF WETLAND/PEAT MOOR ON THEIR WESTON MOOR AND CLAPTON MOOR NATURE RESERVES. THE PROJECT WILL ALSO BENEFIT OTHER PLANTS AND WILDLIFE WHICH FLOURISH IN WETLAND AREAS.

The government aims to ensure all waterbodies in England meet good ecological status by 2027. Any waterbody that does not meet good ecological status is classified as failing under the European Union's Water Framework Directive (WFD). In addition, the government's 25 Year Environment Plan sets out an ambition to develop a growing and resilient network of land, water and sea that is richer in plants and wildlife.

Only 16% of England's water bodies are at good ecological status, and water quality is a key challenge within North Somerset. Only one operational sub catchment (Kenn – source to Kenn Moor SSSI) has achieved 'good' ecological status (see Appendix 4).

The Reasons for not achieving good water quality status include: high phosphate levels (from agricultural/sediment run off, urban diffuse pollution, and treated sewage discharges and sewage overflows); high sediment loading (from run-off from agricultural land); flooding (from run-off in both urban and rural areas); low river flows (associated with abstraction for water supply and poor upstream water retention and aquifer recharge); reduced natural habitat and wildlife (associated with physical modification of watercourses, poor riparian habitat, barriers preventing fish migration and an increase of invasive non-native species).

²⁸ <https://www.realworldvisuals.com/rwv-projects/carbon-sequestration-in-severn-estuary>

The WENP NRN has identified key wetland connectivity opportunities (see Appendix 4), which is based on Environment Agency (EA) data - Working with Natural Processes (WWNP): Floodplain Reconnection Potential. WWNP Floodplain Reconnection Potential is the Environment Agency's best estimate of locations where it may be possible to establish reconnection between a watercourse and its natural floodplain, especially during high flows.

Establishing the right trees and woodlands in the right places along rivers and within water catchments presents great opportunities to help regulate water flow to reduce flood risk, stabilise riverbanks, cool water with their shade and reduce pollutants that might otherwise drain into watercourses. They can also provide homes for wildlife and wildlife corridors. Where water courses pass close to trees and through existing woodland they can pick up woody debris. This can slow water flow, providing a natural form of flood management, helping sediment settle, and providing new habitats within the water course. Appendix 4 also provides Environment Agency data (WWNP Riparian Woodland Potential and WWNP Floodplain Woodland Planting Potential) that can be used to help inform locations for tree planting (see Appendix 4).

General 'greening' e.g. green roofs, walls, tree planting, rain gardens etc, especially within Flood Zones 2 and 3 also has potential to slow run off and therefore reduce overland flooding, and also help improve water quality.

The EA's ambition is a cleaner, healthier and better managed water environment. They highlight the following key areas where everyone can help play their part in helping to improve the water environment:

- the public and businesses must do more to keep plastics, fats and household chemicals out of our drains
- water companies must continue reducing pollution incidents from sewer systems and sewage treatment works
- farmers must manage their land responsibly, using fertilisers and pesticides with much greater care – all the more so as the government considers new payments that increasingly reward environmental and public benefits
- water companies, businesses and volunteers to provide practical and financial support for EA catchment partnerships to help rejuvenate our water environment

Appendix 4 highlights some specific opportunities for improving water quality and reducing flood risk, drawing on various sources including: SSSI condition assessment (these also overlap with grassland opportunities), existing Bristol Avon Catchment Partnership (BACP) projects, WFD water quality, the Nature Recovery Network (NRN) and Environment Agency WWNP data.

***Recommendation 7:** NSC to continue to work with partners, developers and private landowners to identify and deliver projects to improve water quality and mitigate flooding. Planning policy to set out the requirements for SUDs as part of new developments.*

8.3.2 Biodiversity and Habitats

8.3.2.1 Woodland

The national tree map for North Somerset (2010) shows that tree crowns and canopies cover 19.1% of the district area (see Appendix 3).

Woodlands cover around 13% of UK land (the European average is 37%), with conifers accounting for approximately 51% of the UK's woodland area – and much of this is commercial plantation of non-native tree species. Ancient woodlands across the UK have been lost through conversion to commercial plantation and face continued threat from infrastructure and housing development. They are highly important for biodiversity, but only cover approx. 2.4% of UK land²⁹.

Woodlands are under threat from invasive species, pests and diseases, lack of management, overgrazing by deer, increasing levels of recreational disturbance and nitrogen pollution. Many woods have become fragmented, intersected by roads and development that degrade habitat and form barriers to wildlife movement.

Appendix 4 sets out specific opportunities for improving the connectivity and quality of woodland habitat within North Somerset, drawing on various sources including SSSI condition assessment, NRN data (which utilised the Natural England Habitat Natural Network mapping³⁰) and the strategic GI corridors developed as part of this strategy, as well as consideration of dormouse records.

8.3.2.2 Grassland

Grassland is the most predominant habitat type within the UK; however, the majority of this habitat is species poor (often consisting of just one or two species of grass), having been degraded through agricultural improvement e.g. ploughing, reseeding and the use of herbicides and fertiliser. In the UK we have lost 97% of our wildflower meadows since the 1930's³¹.

Although many of our best wildflower and grassland sites are protected e.g. in North Somerset there is the European designated Mendip Limestone Grassland SAC and grassland SSSIs, often the management of these sites is a challenge in the face of a lack of resources, and other pressures such as recreation and climate change. These protected sites are also fragmented.

Outside of statutory designated sites, grassland habitat has been identified with Local Wildlife Sites (LWS), although these are mainly in private ownership and therefore the condition of these sites is largely unknown. Within North Somerset there is a large area of grassland

²⁹ The State of Nature Report (2019)

³⁰ The Natural England Habitat Network dataset (based on the priority habitat inventory (PHI)) which identifies habitat groups and opportunities for habitat restoration and creation to reduce fragmentation.

³¹ State of Nature Report (2019)

priority habitat³², the Somerset levels and moors grazing marsh – although the majority of this grassland is agriculturally improved.

Appendix 4 sets out opportunities for improving the connectivity and quality of grassland habitat within North Somerset, drawing on various sources including SSSI condition assessment, NRN data (which utilised the Natural England Habitat Natural Network mapping³³) and the strategic GI corridors developed as part of this strategy.

***Recommendation 8:** NSC to work with partners, developers and private landowners to retain, restore and re-connect priority habitats in order to help restore biodiversity and support functioning ecosystems.*

8.3.3 Access to Open Space

Open space, sport and recreation facilities are key elements of green infrastructure, and appropriate provision of such assets make a fundamental contribution to the health and wellbeing of communities. Provision of sufficient open space, of appropriate quality and accessibility also plays an important role in the sustainability of communities.

A new Public Health England report³⁴ highlights that Improving access to quality green space has the potential to improve health outcomes for the whole population. However, this is particularly true for disadvantaged communities, who appear to accrue an even greater health benefit from living in a greener environment. The value of green infrastructure has also been keenly recognised during the COVID 19 pandemic where access to green space has played a key role in people’s well-being; alongside a wider appreciation of nature.

The West of England Nature Partnership (WENP) has developed a suite of maps³⁵ identifying accessibility to green space across the West of England, and best opportunities to target efforts to improve such access and reduce inequalities. The maps model catchment areas where residents are able to access open green space within a 300m walk (roughly translating to a 5 minute walk). These maps provide a helpful baseline from which to improve and help start more conversations around improving access to more and better quality green spaces for the benefit of everyone.

Figure 7 below shows access to publicly accessible open space across the study area (using open space data provided by NSC). A buffer of 300 metres has been applied to each of these spaces. The access maps also show Census 2011 Output Areas (OAs), which are data points (shown in blue) on the maps below. Each OA centroid is the lowest level of geography from the census which contains roughly 129 households. Using this point dataset helps to clearly

³² Natural England Priority Habitat Inventory

³³ The Natural England Habitat Network dataset (based on the priority habitat inventory (PHI)) which identifies habitat groups and opportunities for habitat restoration and creation to reduce fragmentation.

³⁴ Public Health England Report - [Improving access to greenspace: a new review for 2020](#)

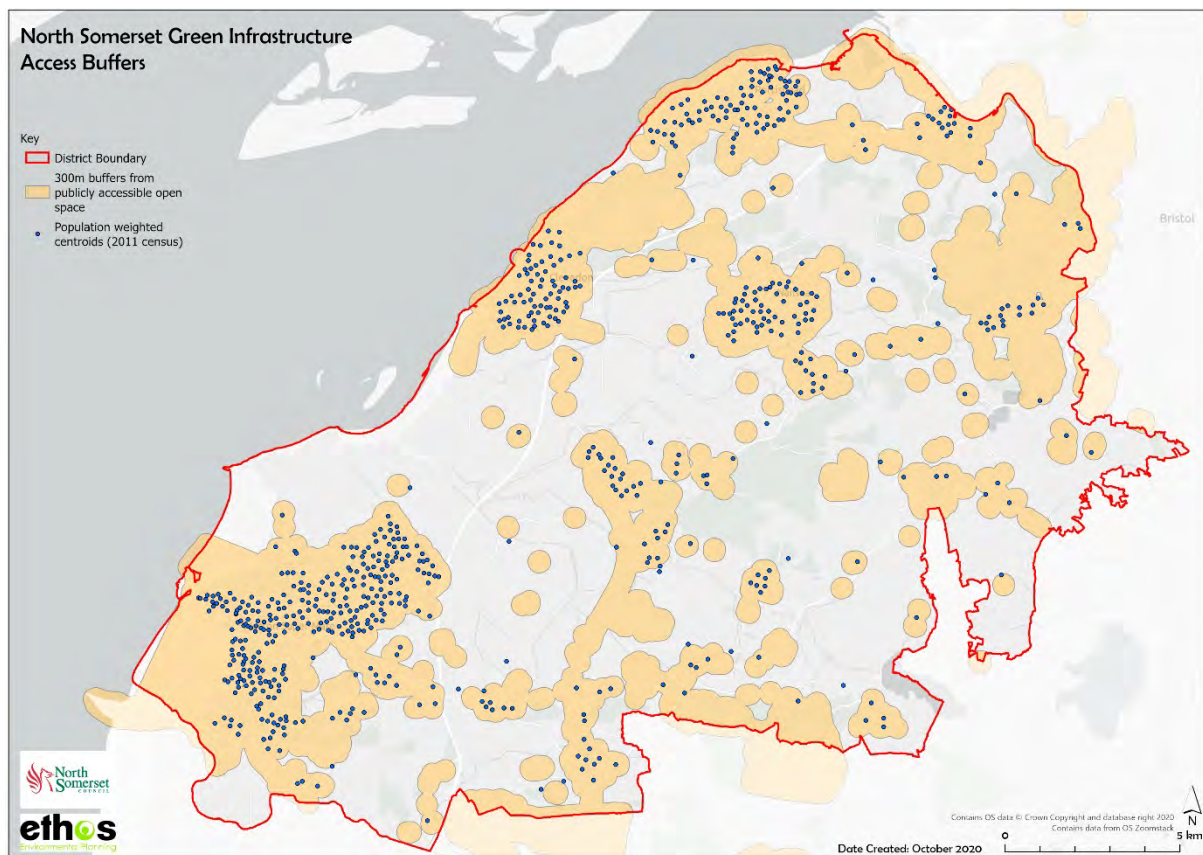
³⁵ <https://awt.maps.arcgis.com/apps/webappviewer/index.html?id=cca6f19dbd644b598481baa68cd3ed2d>

show where the key gaps in access are (i.e. in the populated parts of the study area) when analysing large scale maps.

As can be seen, there is good access to open space across the study area. However, the open space mapping and evidence base that underpins the NSC open space standards and areas of shortfall (developed in 2009) is now dated.

Recommendation 9: *It is recommended that a new open space assessment is undertaken in order to review existing open space (including play space) provision, and inform robust open space quantity, quality and access standards.*

Figure 7- Access to open space (300m buffer)



8.3.4 PROW/Access Routes

GI is an important tool in helping achieve a cleaner, greener and more sustainable transport network through; reducing the carbon footprint of transport e.g. providing opportunities for walking and cycling; connecting places for both people and wildlife through the provision of 'green' routes; and improving health and wellbeing e.g. through reducing air pollution and encouraging active travel. The Covid-19 crisis has highlighted the vital importance of effective sustainable transport.

The Council are currently revising their Rights of Way Improvement Plan. The main deficiencies in the network are routes for cyclists and horses (See Appendix 2 - Policy Context, Section 4.4 for further information).

Appendix 4 sets out opportunities to improve key strategic access routes, identified through the policy and strategy review and consultation within NSC (Appendix 1).

8.3.5 Agricultural land and Food Growing

Agricultural productivity, linked to the intensification of land management and the decline in farmland nature, is still increasing, and poses one of the most significant pressures on the terrestrial and freshwater environment (State of Nature Report, 2019), although with government funding many farmers have adopted wildlife-friendly farming. The Farming and Wildlife Advisory Group (FWAG)³⁶ provide support and advice to farmers to help them manage their land in a more sustainable way.

The Agricultural Land Classification assesses the quality of farmland to enable informed choices to be made about its future use within the planning system. There are five grades of agricultural land, with Grade 3 subdivided into 3a and 3b. The best and most versatile land is defined as Grades 1, 2 and 3a. Planning policies and decisions should take account of the economic and other benefits of the best and most versatile agricultural land (see Appendix 3 for map showing the best and most versatile agricultural land in North Somerset).

The emerging Agriculture Bill will be vitally important in improving the value of farmland for biodiversity and health and wellbeing. It will fundamentally change direct payments to farming (through the proposed Environmental Land Management Scheme - ELMS)³⁷, where farmers will be rewarded for protecting and enhancing the environment i.e. protecting and enhancing natural capital and the resulting public goods/ecosystem services, with particular emphasis on soil health, biodiversity, flood protection and public access (amongst other things).

With the introduction of ELMS, and other potential income opportunities for farmers and landowners e.g. through developers paying for biodiversity net gain units, or nitrate/phosphate offsetting, there is huge potential for regenerative agriculture (a conservation and rehabilitation approach to food and farming systems, focusing on soil regeneration, biodiversity and the water cycle) and agroecology (the application of ecological concepts and principals in farming) to become mainstream.

Agroforestry is an example of agroecology and means combining agriculture and trees. Planting trees on farms can give farmers healthier soil and higher yields (including through the trees providing fruits/nuts/timber), as well as creating homes for wildlife. It has already been rated as one of the most promising systems for the 'sustainable intensification' of

³⁶ <https://www.fwagsw.org.uk/>

³⁷ The new payments system is called Environmental Land Management System (ELMS).

farming, meaning that farmers can produce more food while also reducing negative impacts on the environment.

Organic farming is also a form of agroecological farming. All organic farmers are required to meet a strict set of standards. These standards guarantee higher animal welfare, fewer pesticides and antibiotics and no GMOs. It also supports more jobs on farms, healthy soil and more wildlife. Individuals can support agroecological farming by engaging with their local farmers and growers, learning about their farming practices and joining a local veg box scheme, or buy organic.

Soil Health

Soil is an essential natural capital asset that provides important ecosystem services – for instance, as a growing medium for food, timber and other crops, as a store for carbon and water, as a reservoir of biodiversity and as a buffer against pollution. However, the estimated annual loss of 2.2 million tonnes of topsoil as a result of erosion, costs the UK economy in excess of £1 billion a year through lost nutrients and a reduction in the agricultural productivity of the land³⁸. This also releases stored carbon and impacts water quality.

Agricultural land management practices that can deliver soil carbon benefits for greenhouse gas mitigation (as well as deliver greater benefits for agronomy and other ecosystem services) include³⁹:

- land use change to woodlands
- taking areas of arable land out of production in conservation orientated field margins,
- integrating grass or herbal leys into crop rotations without increasing overall ruminant populations
- liming of agricultural soils to maintain optimal pH, and making use of cover crops.

Huge carbon stores under grasslands discovered

³⁸ http://www.ukso.org/agri-pocs/wind_info_sheet.pdf

³⁹ <https://www.gov.uk/government/publications/natural-capital-committees-seventh-annual-report-government-response/the-governments-response-to-the-natural-capital-committees-state-of-natural-capital-report-2020>



Greenhouse gas storage is a regulating ecosystem service that contributes to reducing the scale and future impacts of climate change (climate change mitigation).

A nationwide survey by ecologists has revealed that over 2 billion US tons of carbon is stored deep under the UK's grasslands, helping to curb climate change.

Published in the leading journal *Global Change Biology*⁴⁰, the study shows that decades of intensive grassland farming across the UK, involving high rates of fertilizer use and livestock grazing, have caused valuable soil carbon stocks to decline. They found 60% of the UK's total soil carbon stored in grasslands – which cover around a third of UK land surface – is between 30cm and 1 metre deep, and also that this deep carbon is sensitive to the way land has been farmed.

The research is part of a five year project supported by DEFRA, aimed at managing UK grassland diversity for multiple ecosystem services, including carbon capture.

The findings suggest that by managing our grasslands in a less intensive way, soil carbon storage could be important to our future global carbon targets, as well as bringing benefits for biodiversity conservation.

Within North Somerset, cattle grazed pasture not only provides soil carbon benefits, but is an important foraging habitat for the local populations of rare lesser and greater horseshoe bats, as reflected within the North Somerset and Mendip Bats Special Area of Conservation (SAC) Guidance on Development: Supplementary Planning Document.

Recommendation 10: NSC to work, when resources allow, with partners to raise awareness of soil health, regenerative agriculture and agroecology practices, and help support farmers and landowners to transition to these practices (e.g. via ELMS), as well as encouraging residents/communities to support their local food producers where possible.

8.3.6 Historic environment and Landscape

Green space and GI cannot be considered separately from the landscape setting and heritage/historic value of these spaces.

The preservation and enhancement of heritage assets are crucial in preserving the landscape and sense of place. Understanding the history of semi-natural and designed landscapes/green spaces is important in informing how these spaces are managed, conserved and protected,

⁴⁰ Legacy effects of grassland management on soil carbon to depth (February 2016)
<https://onlinelibrary.wiley.com/doi/full/10.1111/gcb.13246>

and often re-wilding or management to enhance biodiversity can be a positive enhancement to the setting of heritage assets.

When preserving and enhancing heritage assets, archaeological sites and non-designated heritage assets (those that aren't scheduled or listed and make up 90% of the historic environment) must be considered along with scheduled historic assets and designated landscapes.

North Somerset Council provide a Historic Environment Record (HER) search service. The following information is held on the historic buildings, sites and monuments record (HBSMR):

- designated heritage assets, including listed buildings, scheduled monuments and registered parks and gardens;
- monuments;
- events – excavations and surveys on archaeological sites;
- find spots;
- historic landscape characterisations;
- unpublished reports and notes; and
- historic mapping.

The management, conservation, enhancement and new provision of GI must also give consideration to landscape character, set out within the North Somerset Landscape Character Assessment Supplementary Planning Document (map provided at Appendix 3).

In addition, the West of England Joint Green Infrastructure Strategy is developing GI Area profiles which utilise landscape character assessments and reference historic landscape character and individual features and sites within them. This includes designed landscapes and their settings such as formal historic parks and gardens, and/or the setting of individual historic settlements and heritage assets such as Conservation Areas, important Listed Buildings, critical views and vistas', Scheduled Monuments which provide historical, social, economic, cultural and environmental context and benefits.

***Recommendation 11:** In developing GI plans and projects, due consideration should be given to landscape and heritage assets to ensure that GI proposals complement these and contribute to place making.*

8.3.7 School grounds/education land

School grounds and education land often have large areas of green space, the majority of which is maintained as close mown grass, and therefore in suitable areas, there is high potential for biodiversity improvement. Developing a diversity of habitats across school grounds, or within a particular area e.g. an outdoor classroom or designated 'nature area' for example, can provide an important teaching and learning resource, and link into various aspects of the curriculum. It also provides the opportunity to raise awareness of biodiversity

issues and to inspire children and young people to take action, and even go on to study subjects such as ecology or nature conservation.

The Polli:Nation project was funded by The Heritage Lottery and worked with 260 schools and 35,000 pupils across the UK to support pollinators between 2015 and 2019.

Although the project is now completed, the website⁴¹ provides advice and school resources to help identify pollinators and make habitat and homes for them. Resources include creative writing and scale drawing, exploring planting and flowers for pollinators, learn and discover key pollinator species and ideas on creative activities.

The Woodland Trust are currently offering free trees to schools and communities⁴².

Recommendation 12: NSC and partners to encourage and support schools to take up wildlife friendly management on their grounds, involving school pupils in their management and making use of outdoor classrooms.

8.3.8 Private Gardens

Gardens for wildlife

Private gardens have been identified as particularly rich in their insect pollinator communities, when compared with public parks and amenity greenspaces⁴³. Therefore, individuals can take actions to help address the ecological and climate emergency and to increase biodiversity. Increasing biodiversity in gardens also provides an opportunity for people to better engage with nature, providing tangible health and wellbeing benefits as well as contributing to food production.

The UK has an estimated 24 million gardens that could be a network of mini nature reserves.

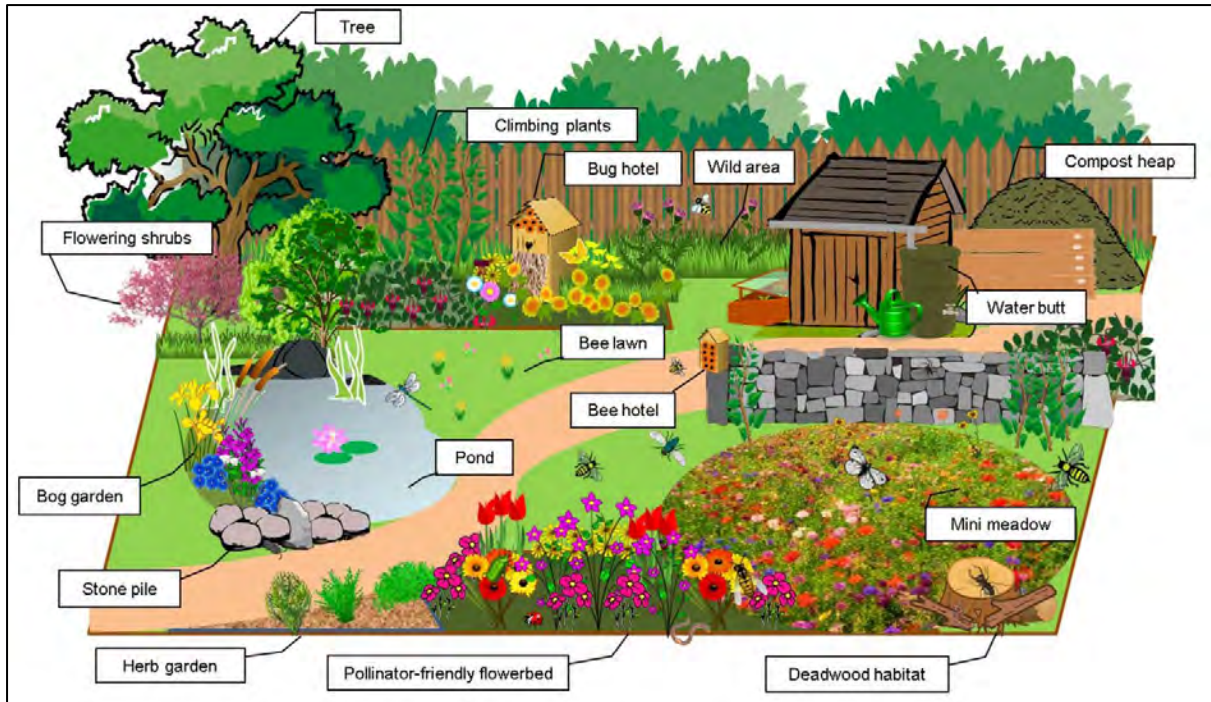
There are numerous sources of guidance on wildlife friendly gardening, from general principles to step by step guidance on creating wildlife friendly features and habitat e.g. from Friends of the Earth, DEFRA, Plantlife, Buglife, The Wildlife Trusts, Gardeners World, BLUE campaign and the RHS (to name a few). Some examples are provided below.

Buglife illustration – highlighting wildlife friendly features that can be incorporated into gardens.

⁴¹ <http://polli-nation.co.uk/>

⁴² <https://www.woodlandtrust.org.uk/plant-trees/schools-and-communities/>

⁴³ Baldock, K.C., Goddard, M.A., Hicks, D.M., Kunin, W.E., Mitschunas, N., Morse, H., Osgathorpe, L.M., Potts, S.G., Robertson, K.M., Scott, A.V. and Staniczenko, P.P., 2019. A systems approach reveals urban pollinator hotspots and conservation opportunities. *Nature ecology & evolution*, 3(3), p.363.



DEFRA advice for pollinator friendly gardening/land management

Bees’ Needs: Food and a home

DEFRA advises that there are 5 simple actions that everyone can take to help pollinators and make sure their populations are sustained:

1. Grow more flowers, shrubs and trees
2. Let your garden (or land) grow wild
3. Cut your grass less often
4. Don’t disturb insect nest and hibernation spots
5. Think carefully about whether to use pesticides



Gardens for water management

Gardens can also help to reduce flood risk and improve water quality through attenuating rainwater. Rain gardens are a type of Sustainable Drainage System (SuDS). The term Rain Garden tends to encompass a whole range of garden design elements including soft landscaping like swales, hard landscaping like infiltration trenches and soakaways, and other components like green roofs, water butts, water features and ponds. These elements attenuate rainwater through increased filtration into the ground, slowing the flow of water to a water course or drainage system, or store rainwater in the garden for use at a later date.

Over the years there has been a growing trend towards people paving over their front gardens for parking spaces or for ease of maintenance. The combined effect of lots of people in a street or area doing this can increase the risk of flooding and pollution to watercourses.

‘Depaving’ is the process of removing these impermeable surfaces such as concrete and tarmac and replacing them with materials such as soil, gravel and permeable paving which allow water to move through them. The ‘depaved’ areas can be planted with a wide variety of suitable plants.

The Environment Agency have produced guidance on the construction methods used to lay permeable paving⁴⁴. The RHS provide the following broad advice⁴⁵:

- Keep paving to a minimum
- Non-permeable paving may require planning permission
- Leave space for plants, including hedges and climbers
- Allow driveways to drain into borders.

Recommendation 13: NSC and partners to encourage and support wildlife friendly gardening.

8.4 Planning and development

8.4.1 Overview

Within the emerging options for the new North Somerset Local Plan, there is a requirement to provide approximately 20,475 new dwellings during 2023-2038.

The protection and provision of GI and nature-based solutions as part of new development is critical in achieving sustainable development and sustainable management of resources. It is essential in addressing multiple planning policy requirements such as biodiversity net gain, SUDs, sustainable transport and ecology.

8.4.2 Standards for the design, delivery and maintenance of GI through development

Developers must demonstrate how they are embedding GI into their developments, from the master planning stage through to delivery and long term management and maintenance.

NSC advocates the Building with Nature standards, in order to guide the quality/layout of masterplans. Accreditation by Building with Nature is also encouraged (see below).

The priority areas for protection, new provision and quality improvements are within the GI network identified at Figure 4. However, GI components will be expected to be considered whether or not the development falls within the strategic GI network.

⁴⁴ Guidance on the permeable surfacing of front gardens:

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/7728/pavingfrontgardens.pdf

⁴⁵ <https://www.rhs.org.uk/advice/profile?pid=878>

The requirement for GI provision should take into account other planning requirements including open space provision, biodiversity, transport and SUDs. A cohesive approach should be presented demonstrating how the GI Strategy delivers the following:

1. Meeting requirements of open space standards;
2. Complying with the biodiversity mitigation hierarchy (avoid, mitigate, compensate);
3. Complying with habitat requirements related to the 'North Somerset and Mendip Bats Special Area of Conservation (SAC) Guidance on Development: Supplementary Planning Document' (SPD);
4. Any additional mitigation requirements related to project specific Appropriate Assessment;
5. Delivering Biodiversity Net Gain requirements;
6. SUDs design and requirements;
7. Additional biodiversity enhancements not covered in the above such as the provision of bird and bat boxes, green walls, green roofs etc.

Building with Nature

The Building with Nature framework defines high quality green infrastructure at each stage of the development process, from planning and design, through to long-term management and maintenance.

Developers can apply to have their scheme assessed and accredited by Building with Nature. Awards at both pre- and post-construction stages are available, to highlight what good GI looks like at each stage of the GI lifecycle.

Applications are encouraged from different types of development, and at various scales, however the current accreditation system is set up to assess 'major' or 'significant' sites (10+ houses; 0.5 hectares or more; 1000+ square metres of floor space) and 'strategic' sites, such as major regeneration schemes or urban extensions, where there are likely to be greater returns for people and for nature.

Accredited schemes which are signed off post-completion, will be invited to apply for a Building with Nature National Award. This is an opportunity to showcase development where people and wildlife are benefiting from well-designed, expertly implemented and sustainably managed features. There are three levels of accreditation:

- **Design** – high quality green infrastructure demonstrated at the planning and design stage of development;
- **Good** – high quality green infrastructure, delivering benefits within the boundary of the scheme; and
- **Excellent** – exemplary quality green infrastructure, delivering benefits within and beyond the boundary of the scheme.
-

8.4.3 Building with Nature in practice

Some examples of developments that have applied the Building with Nature standards to achieve accreditation are provided below.

Elderberry Walk, Bristol (Design Award)

A brownfield development providing 161 new homes on the former Dunmail Primary School focuses around a central green street, with retained trees, new multifunctional green infrastructure features, a communal wildlife garden and edible planting.



Lower Mill Estate, Cotswolds (Design Award)

Up to 575 holiday homes in the heart of the Cotswolds, on former quarry site. Provides a rich network of GI, bringing benefit to both people and wildlife through a landscape-led approach.



Gloucester Services (Full Award (Good))

A north and south bound motorway service area on the M5 motorway, incorporating green infrastructure including an outdoor picnic area, play facilities and habitat provision. Leads with its connection to the surrounding Cotswold landscape, and delivers a tranquil setting for the benefit of visitors and employees.



8.4.4 The benefits of embedding GI into new development

As highlighted within the report Demystifying GI⁴⁶ *‘Multi-functionality is a key concept for GI – i.e. making the best use of land to provide a range of valuable goods and services. As a result, it is critical in achieving sustainable development and sustainable management of resources. This is of increasing importance in the UK, a small and in some areas densely populated island facing a wide and often competing range of demands and challenges being placed on a finite land resource.*

GI needs to be part of a shared vision, requiring a holistic approach that embraces many disciplines and ecosystem service benefits while providing a network of connections at every landscape scale. It therefore permeates every level of the planning, design and management

⁴⁶ Demystifying GI – UK Green Building Council, Feb 2015

process, and is relevant at every scale of development. A positive and proactive approach to GI will ensure the best use of the land, providing tangible returns on investment and increased functionality, together with attention to biodiversity and landscape character’.

Not only does the design, provision and maintenance of GI provide a range of environmental and social benefits (see Section 2.2), but it also provides direct and tangible benefits to the developer, including:

- **Enhanced reputation:** showcasing best practice, attracting high quality staff, positive engagement with communities and planning authorities, and a chance for national awards.
- **Reduced costs and increased land/property value:** taking a holistic approach from the start of the project that embraces and considers all relevant disciplines together will ensure the best possible scheme layout, therefore reducing construction and maintenance costs. There is a multitude of evidence showing that GI also increases the value of land and property.
- **Planning permission clarity:** clearly demonstrating how the development will meet a number of local and national policies and have multiple benefits for society, the environment and the economy can result in the planning authority looking more favourably on the development and result in planning consent with fewer planning conditions.

8.4.5 Mechanisms for delivering GI through planning and development

Planning and development can positively contribute to the strategic GI network through: Developer contributions (planning obligations); provision of Suitable Alternative Natural Greenspace (SANG); biodiversity net gain; carbon offsetting and nitrate/phosphate offsetting. These current mechanisms for GI delivery are examined in Appendix 2.

North Somerset currently delivers new GI largely through a mix of developer funded and delivered infrastructure and developer contributions, both on and off-site. The authority is also exploring payments for sustainable land management, biodiversity net gain units (habitat banking) by developing a Biodiversity Net Gain Strategy. It is also seeking to adopt ‘Suitable Alternative Natural Greenspace’ or SANG’s, to be used as mitigation for recreational pressures on particular European sites

There may also be potential for Nitrate/Phosphate offsetting within North Somerset, where new development is likely to impact on the Severn Estuary European Marine Site.

Carbon sequestration through woodland creation has been identified as a cost-effective means of mitigating climate change and the authority has commenced a significant amount of tree planting on its managed public open spaces as part of its ‘rewilding’ initiative and carbon reduction objectives. Similar initiatives including grant funded planting and working in association with other bodies, such as the Forest of Avon Trust all contribute to the delivery of GI across North Somerset.

Note also that National GI Standards, a key objective of the Government's 25 Year Environment Plan, are being developed by Natural England (at the time this strategy was written) and if adopted may amend or supersede a number of current planning obligations.

NSC will be reviewing its existing 'typology' based development contributions, which are in need of updating. This review will investigate all of the above mechanisms and may form part of a wider review of the Council's Development Contributions Supplementary Planning Document, in support of the emerging Local Plan to 2038.

It is envisaged that some or all of these multiple delivery mechanisms can be brought together, to enable development and projects with a wider and more ambitious vision and objectives.

Biodiversity net gain

Biodiversity Net Gain is an approach to development that leaves biodiversity in a better state than before. Where a development has an impact on biodiversity it encourages developers to provide an increase in appropriate natural habitat and ecological features over and above that being affected in such a way it is hoped that the current loss of biodiversity through development will be halted and ecological networks can be restored.

Biodiversity Net Gain is set to become a mandatory part of planning through the Environment Bill to compensate for loss of biodiversity through development. Once enacted, this is likely to require any development under the Town and Country Planning Act 1990 (except Permitted Development and Householder Applications) to evidence a minimum 10% increase in biodiversity value and 30 years of habitat management for biodiversity. Further to this, BNG is supported within the National Planning Policy Framework (NPPF), which states that planning policies and decisions 'should contribute to and enhance the natural and local environment by minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures.'

DEFRA have developed a metric to measure the impacts of development on biodiversity to meet the NPPF policy. Many local planning authorities now require net gain to be considered as part of development applications. To claim BNG and to generate long-term gains for nature, the 10 BNG Good Practice Principles for Development (CIRIA, CIEEM and IEMA, 2016) are followed. The principles provide the framework for high quality and meaningful BNG that should make a measurable and positive contribution to biodiversity.

There is potential for some of NSC's landholdings to generate income through the provision of biodiversity net gain units (habitat banking), where off setting of biodiversity loss from new development sites is required.

West of England Biodiversity Net Gain (BNG) Guidance

The development of BNG guidance has emerged as a strategic project from the preparation of the West of England Joint Green Infrastructure Strategy (JGIS) 2020-2030.

NSC are currently investigating their own Biodiversity Net Gain Strategy.

Suitable Alternative Natural Greenspace (SANG)

‘Suitable Alternative Natural Greenspace’ is the name given to green space that is of a quality and type suitable to be used as mitigation for recreational pressures on particular European sites. The role of SANGs is to provide alternative greenspace to divert visitors from European sites and reduce the potential impact of residential development on European sites by preventing an increase in visitor pressure. The effectiveness of SANGs as mitigation will depend upon the location and design, which must be such that the SANG is equally as attractive as the European site(s) to users of the kind that currently visit European sites.

European sites within North Somerset are:

- The North Somerset and Mendip Bats (SAC);
- The Severn Estuary European Marine Site (SPA/SAC/Ramsar);
- The Mendip Limestone Grasslands (SAC); and
- The Avon Gorge Woodlands (SAC).

The Sustainability Appraisal Scoping Report for North Somerset’s new Local Plan (2038) sets out the requirement for an appropriate assessment to address likely impact on European Sites. The creation of SANG and SANG policy/strategy could be a mitigation measure arising from the appropriate assessment. The ensuing Habitats Regulation Assessment for the Local Plan will provide more detailed requirements.

Carbon Offsetting/Sequestration

Carbon sequestration through woodland creation has been identified as a cost-effective means of mitigating climate change. The Woodland Carbon Code is the voluntary standard for UK woodland creation, it is based on a ‘outputs-based approach’ as businesses pay for tonnes of carbon sequestered. The code allows credits to be both sold before and after planting to help raise revenue associated with both capital and maintenance costs, and also to meet upfront costs.

Nitrate/Phosphate offsetting

High levels of nitrates and phosphates in water are a problem because they cause oxygen depletion which is harmful to humans and biodiversity. Key sources of nitrate pollution are farming (artificial fertilisers and animal waste leaching into water) and domestic and industrial sewage.

Defra and Natural England have launched a nitrate offset scheme to unblock housebuilding in south Hampshire by offsetting nitrogen impacts on the Solent. Housing developers will buy credits to create new habitats such as meadows, woodlands and wetlands on poor quality agricultural land, which will prevent harmful levels of nitrates from new housing from reaching the Solent’s rare wildlife and habitats.

There may be potential for Nitrate/Phosphate offsetting within North Somerset, where new development is likely to impact on the Severn Estuary European Marine Site. The forthcoming Habitats Regulation Assessment for the Local Plan will provide more detailed requirements to address likely impact on European Sites. The creation off-set habitat to reduce Nitrate/Phosphate pollution could be a mitigation measure arising from the appropriate assessment.

Policy Recommendations

Recommended multi-functional GI policy

The Strategy is providing an important evidence base for the formulation of policies and proposals to be included in the councils new Local Plan (2038). Delivery of Green Infrastructure may also be through means of neighbourhood plans.

A Green Infrastructure Planning Policy Assessment Tool⁴⁷ has been developed with the Glasgow and Clyde Valley Green Network (GCVGN). This self-assessment tool, complete with guidance for local authorities to use, is free and designed to improve the design and wording of policies that address GI functions within strategic and local plans. It has been informed by the Building with Nature standards.

Of particular importance is the need to move away from producing a single GI policy to develop separate but linked policies that cover the full range of functions that green infrastructure covers.

The assessment tool is built on the report 'Green Infrastructure Policies in the CSGN – A Review of Local Authority Policies on Green Infrastructure in Built Development'⁴⁸, which establishes the quality of current and/or proposed Green Infrastructure (GI) relevant policies in local authorities' Local Development Plans and Supplementary Guidance within the Central Scotland Green Network (CSGN) area. The study also revealed the relative importance of Supplementary Guidance as the location for GI policy.

As a follow- on task, the study collated the best policies as a suite of example GI policies, which are set out in Table 4 below.

⁴⁷ <https://mainstreaminggreeninfrastructure.com/outputs-page.php?Making-Better-Policies-and-Plans-for-Green-Infrastructure:-A-Self-Assessment-Tool>

⁴⁸

[https://mainstreaminggreeninfrastructure.com/reports/GI%20Policies%20in%20the%20CSGN%20FINAL%20v5.2%20Report%20and%20App%201%20\(1\).pdf](https://mainstreaminggreeninfrastructure.com/reports/GI%20Policies%20in%20the%20CSGN%20FINAL%20v5.2%20Report%20and%20App%201%20(1).pdf)

Table 4 - Suite of example GI policies (from Green Infrastructure Policies in the CSGN – A Review of Local Authority Policies on Green Infrastructure in Built Development).

Green infrastructure primary policy	
Green infrastructure is integral to place-making underpinned by the qualities of successful places, and therefore must be part of the design process from the outset, providing water management, access networks, habitat enhancements and open space functions.	
<p>To achieve this, developments are expected to:</p> <ul style="list-style-type: none"> • discuss what green infrastructure is appropriate for the site at pre-application meetings with the planning authority and relevant stakeholders; • appraise the site context for green infrastructure functions, undertake habitat and hydrological assessments of the site as requested through the pre-application discussions, and demonstrate how they have influenced the design; and • take opportunities to achieve multi-functionality by bringing green infrastructure functions together. 	
Green infrastructure functions	
Water management	Access networks
Development proposals will integrate naturalised SuDS into the design of green infrastructure, and where they are part of open space obligations will be safe and accessible, creating an attractive and distinctive setting for new developments.	Development proposals will maintain and enhance the quality and connectivity of access networks, integrating active travel routes (linking workplaces, schools, community facilities and public transport hubs) and recreation routes into green infrastructure.
Habitat enhancements	Open space
Development proposals will conserve and enhance on-site biodiversity; habitat networks within and adjacent to the site; and habitats associated with the strategic wildlife network	Development proposals will meet local accessibility, quality and quantity standards for open space, and be designed to cater for the needs of the community.
Stewardship of green infrastructure	
Developers will provide details of the green infrastructure functions and maintenance requirements, and the party responsible for these, and demonstrate funding arrangements for their long-term delivery to the satisfaction of the local authority before construction starts.	

The example policies and functions above should form the basis for GI approach within the NSC new local plan. In addition to the above, GI policy should also include specific consideration of heritage and landscape, and any additional specific ecological requirements not covered by Biodiversity Net Gain or Appropriate Assessment (see below) as required by the mitigation hierarchy (avoid, mitigate, compensate).

Biodiversity net gain policy

The requirement for biodiversity net gain (BNG), where possible, is set out within the NPPF and is soon to be mandated within the Environment Bill.

The local plan policy should set out the following:

- Net gain should be delivered in line with the upcoming Environment Act;

- What the specific local requirement is for BNG (e.g. North Somerset specific approach or West of England approach).

Open space policy

Updated policy/SPD will be required in relation to any open space review undertaken.

European sites/Appropriate Assessment policy

Following completion of the Appropriate Assessment (as part of the new Local Plan 2038), policies will need to be set out for required mitigation on European sites e.g. recreational impacts, impacts on bats, Water Framework Directive.

9.0 DELIVERY AND MONITORING

This section of the report sets out the approach for the delivery and monitoring of the GI strategy.

9.1 Key Principles for GI in North Somerset

In order to implement the objectives (Section 7) and action plan (Section 10), this strategy has adopted the WoE JGIS principles, which are as follows:

Educate: Ensure that the multi-functional benefits of Green Infrastructure including contribution to human health and wellbeing are better understood and clearly recognised by authorities, agencies and other partners. Resulting in, increased allocation of funding for GI and a Green Infrastructure focus integrated into the planning and development process, through using the tools and metrics required by national legislation.

Embed: Apply a natural capital approach in accordance with national legislation and guidance to seek to ensure that new development delivers a net gain in natural capital whilst protecting irreplaceable habitats and support the maintenance and enhancement of the strategic Green Infrastructure network.

Collaborate: The authorities, agencies and other partners in their delivery of Green Infrastructure across the West of England will ensure early, continuous and effective engagement with each other.

Evidence: Monitor and keep an up-to-date West of England shared Green Infrastructure and biodiversity evidence base.

Invest: Secure investment in Green Infrastructure through the planning process and other delivery and funding mechanisms to deliver strategic Green Infrastructure priorities and its long-term stewardship.

Communicate: Promote wider public understanding of GI and natural capital, the benefits it provides and opportunities to enhance Green Infrastructure in the West of England.

9.2 Delivery

9.2.1 Key delivery mechanisms

The key delivery mechanisms, together with land acquisition and/or management, that need to be used together to deliver the Strategy objectives and any identified projects are:

- Planning policy (see Appendix 2);
- Funding (see Appendix 6);
- Community involvement; and
- Skills and partnership working.

9.2.2 Partnerships and community involvement

The GI Strategy cannot be delivered by NSC alone. It is intended for use by policy makers and practitioners working in all sectors, particularly those with a role in creating sustainable places; strategic and policy planners, developers, managers of land and natural capital, communities and businesses.

The council will seek actively to work with partners locally in North Somerset, regionally in the West of England and beyond to drive collaborative action. In delivering this strategy, NSC will help deliver the WoE Joint GI Strategy. Current and potential partners are set out below:

Public Interest

- Planning and Highway Authorities
- GI Partnerships
- Local Service Providers
- Statutory Consultees
- Education/Schools
- Sports

Specific groups in North Somerset may include:

- Regional: WENP, Severn Estuary Partnership, Forest of Avon Trust, Bristol Avon Catchment Partnership (BACP), Wessex Water, Mendip Hills AONB Partnership, Local Enterprise Partnership
- NSC: Go4Life Partnership, Community groups and Friends groups
- Strategic Orgs: Natural England (NE), Environment Agency (EA), Woodland Trust (WT), National Trust (NT), Avon Wildlife Trust (AWT), Bug life (B-lines), Wildfowl and Wetlands Trust (WWT), Farming and Wildlife Advisory Group (FWAG), Association of Severn Estuary Relevant Authorities (ASERA).

Private Interests

- Private landowners/farmers
- Developers
- Management Agents
- Transport Providers e.g. Network Rail Local Politicians

Community Interests

- Amenity Groups
- Special Interest Groups
- Local Communities
- Children & Young Persons
- Visitors

9.2.3 Funding

It is expected that GI will be delivered and funded through a number of key mechanisms, including:

- Planning conditions, obligations and/or Community Infrastructure Levy (CIL) placed on developers;
- Developers integrating the principles into their proposals
- NSC including it in actions e.g. land management.
- Special projects that draw on external funding or grant schemes; and
- Local community action, including fundraising and use of the voluntary sector and charitable trusts.

Appendix 6 sets out some specific funding sources that will be considered in delivering the strategy.

***Recommendation 14:** Establish a GI Forum to oversee the delivery of GI in North Somerset, including: coordinating stakeholders' views; identifying opportunities for securing delivery; raising awareness on key issues or barriers to delivery; and encourage community engagement in delivery of the strategy, as well as linking to high-level partnership groups e.g. WENP.*

9.3 Monitoring

Monitoring will help to inform and refine future spatial plans and policies relating to green infrastructure. Strategic monitoring will focus on the extent to which the planned green infrastructure network is delivered and at a local level what multifunctional benefits are actually being delivered on the ground. A consistent method of monitoring delivery and developing a co-ordinated and consistent method of reporting green infrastructure delivery should form part the North Somerset GI Strategy.

Part 2 of this report sets out project specific measures within an Action Plan which will form the basis of the approach to monitoring. It is important to establish key measures to evaluate the success of the implementation of this strategy and it is recommended that this is focused around project delivery.

An annual monitoring report against the action plan should be produced and this used in turn to update the action plan.

9.4 Action Plan

The Action Plan is provided at Part 2 of this report.

Part 2 – Action Plan

This action plan covers strategic short-term, medium-term and long-term actions in order to take forward the recommendations and deliver the vision, aims and objectives of the strategy. The Action Plan is a live document which will be reviewed annually and updated as plans and projects progress.

Each action is linked to a GI theme and objective(s), and identifies the lead organisation, partners, targets, timescales and funding source.

Both the GI corridors and opportunities for improving GI are indicative, and where they fall on private land, discussion around opportunities and partnerships would be sought. No action would be taken without first consulting with the landowner.

Indicative time scales for projection completion have been included based on the following timeframes:

- Short term – to be completed by 2024
- Medium term – to be completed by 2027
- Long term – to be completed by 2031
- Ongoing – some areas of work will be continuing throughout the period of the strategy

These time frames may alter because actions will be prioritised after the consultation stage. This is because it is possible that new ideas are introduced, or existing proposals amended in some way.

Ref	Project name	Project summary	Main Objective	Main focus	Theme	Lead	Funding source	Lead Team	Timescale
1	Rewilding - tree planting to 2022	Deliver Council motion to rewild as much of North Somerset Council land as possible	Greater resilience to climate change	Council land	Biodiversity	North Somerset Council	Existing revenue budget and donations from the Woodland Trust	Tree Team	Short term
2	Rewilding - creating tall grass to 2021	Deliver Council motion to rewild as much of North Somerset Council land as possible	Improved and better-connected ecological networks	Council land	Biodiversity	North Somerset Council	Existing revenue budget	Tree Team	Short term
3	Rewilding - expansion	Consider further areas of council land for re-wilding/management for biodiversity – manage 30% land for biodiversity by 2030 (In accordance with the government commitment).	Improved and better-connected ecological networks	Third party land	Biodiversity	North Somerset Council	Grant funding will be required	Parks Team	Long term
4	Ash dieback action plan	Create a plan that details how we will manage ash dieback including the	Health and wellbeing for all	Council land	Open space	North Somerset Council	Budget growth required	Tree Team	Short term

Ref	Project name	Project summary	Main Objective	Main focus	Theme	Lead	Funding source	Lead Team	Timescale
		development of a comms plan							
5	Rewilding champions lottery project	Lottery funded project in partnership with Avon Wildlife Trust to develop volunteering opportunities to support rewilding and to measure biodiversity changes	Improved and better-connected ecological networks	Council land	Biodiversity	North Somerset Council	National Lottery	Natural Environment Team	Short term
6	Nature recovery network development	To develop more detailed analysis of these corridors to ensure focus is on the most important corridors.	Improved and better-connected ecological networks	Third party land	Biodiversity	North Somerset Council	Existing revenue budget	Parks Team	Medium term
7	Strawberry Line Extension	The establishment of a Bridleway from Yatton Station through Kenn to Clevedon	Health and wellbeing for all	Third party land	Access	North Somerset Council	S106, Sustainable Transport	PROW Team	Medium term
8	England Coast Path development	The establishment of a National Trail from Aust to Brean (Avonmouth to Uphill	Health and wellbeing for all	Third party land	Access	Natural England/NS C	England Coastal Path Establishment Fund	PROW Team	Medium term

Ref	Project name	Project summary	Main Objective	Main focus	Theme	Lead	Funding source	Lead Team	Timescale
		being in North Somerset)					(EU Funding)		
9	Ensure planning policy is up to date with GI thinking and approach	Review and update GI planning policy to ensure that a resilient and healthy GI network is protected and enhanced	Create and maintain sustainable places	Plannin g policy	Biodiversity	North Somerset Council	Existing revenue budget	Natural Environment Team	Short term
10	Local Plan SPD - trees	Develop a SPD for trees to add relevant detail to the policies in the Local Plan. This will provide further guidance for development on specific sites and, or, on particular issues, such as design.	Create and maintain sustainable places	Plannin g policy	Biodiversity	North Somerset Council	Existing revenue budget	Tree Team	Short term
11	Local Plan SPD - biodiversity	Develop a SPD for biodiversity to add relevant detail to the policies in the Local Plan. This will provide further guidance for development on specific sites and, or,	Create and maintain sustainable places	Plannin g policy	Biodiversity	North Somerset Council	Existing revenue budget	Parks Team	Short term

Ref	Project name	Project summary	Main Objective	Main focus	Theme	Lead	Funding source	Lead Team	Timescale
		on particular issues, such as design.							
12	Local Plan SPD - access	Develop a SPD for access to add relevant detail to the policies in the Local Plan. This will provide further guidance for development on specific sites and, or, on particular issues, such as design.	Create and maintain sustainable places	Plannin g policy	Access	North Somerset Council	Existing revenue budget	PROW Team	Short term
13	Local Plan SPD - open space standards	Develop a SPD for open space standards to add relevant detail to the policies in the Local Plan. This will provide further guidance for development on specific sites and, or, on particular issues, such as design.	Create and maintain sustainable places	Plannin g policy	Biodiversity	North Somerset Council	Existing revenue budget	Parks Team	Short term

Ref	Project name	Project summary	Main Objective	Main focus	Theme	Lead	Funding source	Lead Team	Timescale
14	Local Plan SPD - SANGs	Develop a SPD for SANGs to add relevant detail to the policies in the Local Plan. This will provide further guidance for development on specific sites and, or, on particular issues, such as design.	Create and maintain sustainable places	Planning policy	Biodiversity	North Somerset Council	Existing revenue budget	Parks Team	Short term
15	Local Plan SPD - bats	Develop a SPD for European protected bat species to add relevant detail to the policies in the Local Plan. This will provide further guidance for development on specific sites and, or, on particular issues, such as design.	Create and maintain sustainable places	Planning policy	Biodiversity	North Somerset Council	Existing revenue budget	Parks Team	Short term
16	Local Plan SPD - biodiversity net gain	Develop a SPD for biodiversity net gain to add relevant detail to the policies in the Local Plan. This will provide further guidance for	Create and maintain sustainable places	Planning policy	Biodiversity	North Somerset Council	Existing revenue budget	Parks Team	Short term

Ref	Project name	Project summary	Main Objective	Main focus	Theme	Lead	Funding source	Lead Team	Timescale
		development on specific sites and, or, on particular issues, such as design.							
17	Horseshoe bat data collection	Carry out a survey of horseshoe bats to identify key habitat for foraging and implement appropriate protection measures		Plannin g policy		North Somerset Council	Existing revenue budget	Parks Team	Short term
18	Citizen science project (bats) with University of the West of England (UWE)	To work in partnership with UWE to enable the public to use our static bat detection equipment to collect bat data that will be used to continually update our knowledge, ensuring our policies remain relevant in terms of Planning and other purposes.	Create and maintain sustainable places	Plannin g policy	Biodiversity	North Somerset Council	UWE	Parks Team	Medium term

Ref	Project name	Project summary	Main Objective	Main focus	Theme	Lead	Funding source	Lead Team	Timescale
19	Rights of Way Improvement Plan No 2	Revision of current version of ROWIP to identify issues which are important to our users and the network, to then prioritise and implement where possible within the next 10 years	Health and wellbeing for all	Third party land	Access	North Somerset Council	Existing revenue budget, funding from Parish Council, S106 funding	PROW Team	Short term
20	Grounds maintenance contract	The current contract expires in June 2021 so it is necessary to prepare for future delivery; particularly ensuring it will be able to deliver rewilding objectives; and achieve carbon neutrality by 2030	Health and wellbeing for all	Council land	Open space	North Somerset Council	Existing revenue budget	Natural Environment Team	Short term
21	Banwell bypass - GI	Work with bypass project team to support delivery of GI objectives	Health and wellbeing for all	Third party land	Biodiversity	North Somerset Council	HIF	Parks Team	Long term
22	District licencing for newts	Work with Natural England to support roll out of this	Health and wellbeing for all	Third party land	Biodiversity	North Somerset Council	Income from the	Parks Team	Medium term

Ref	Project name	Project summary	Main Objective	Main focus	Theme	Lead	Funding source	Lead Team	Timescale
		scheme in North Somerset and then take on the licensing responsibility when permitted.					licencing scheme		
23	DEFRA Resilience and Innovation	Apply to the programme to seek fully funded grant to deliver flood risk reduction projects across North Somerset	Health and wellbeing for all	Third party land	Water	North Somerset Council	DEFRA fully funded project	Natural Environment Team	Short term
24	Worlebury hillfort lottery project	Make an application to the lottery to fund activities to protect the hillfort for future generations.	Create and maintain valued healthy landscape	Council land	Open space	North Somerset Council	National Lottery	Natural Environment Team	Medium term
25	Street tree planting programme	Explore opportunities to increase street tree planting working with the Forest of Avon Trust 'Trees for Climate' programme	Health and wellbeing for all	Council land	Open space	North Somerset Council	Trees for Climate fund	Tree Team	Medium term
26	Victorian sea defences investigation	Develop a programme to investigate the	Greater resilience to	Council land	Water	North Somerset Council	Environment Agency	Flood Risk Team	Long term

Ref	Project name	Project summary	Main Objective	Main focus	Theme	Lead	Funding source	Lead Team	Timescale
		condition of the Victorian sea defences in Weston super Mare and Clevedon	climate change				grant funding		
27	Beach sand recycling grant application, Weston super Mare	Make an application to the Environment Agency for funding to redistribute the sand that is moved by the tide	Greater resilience to climate change	Council land	Water	North Somerset Council	Environment Agency grant funding	Flood Risk Team	Short term
28	Nailsea outfall partnership project	Continue working with partners seeking funding to deliver this water quality improvement project on the moors between Nailsea and Tickenham	Create and maintain valued healthy landscape	Third party land	Access	North Somerset Council	Grant funding will be required	Parks Team	Long term
29	North Somerset Levels and Moors partnership project	Working with partners to restore wetland to lock up more carbon and enhance biodiversity	Improved and better-connected ecological networks	Third party land	Biodiversity	North Somerset Council	Grant funding will be required	Natural Environment Team	Long term

Ref	Project name	Project summary	Main Objective	Main focus	Theme	Lead	Funding source	Lead Team	Timescale
30	Partnership working	Continue to work collaboratively with both local and regional partners in securing and enhancing GI within North Somerset and beyond	Create and maintain sustainable places	Third party land	Access	North Somerset Council	Existing revenue budget	Natural Environment Team	Ongoing
31	Awareness raising of nature and climate emergency	Raising awareness of these and the multifunctional benefits of GI in tackling the crises.	Create and maintain sustainable places	Council land	Access	North Somerset Council	Existing revenue budget	Natural Environment Team	Ongoing
32	Volunteering - engagement and activities	Continue to engage with communities in the management of open space/land for biodiversity - investigate introducing a Ranger service subject to funding	Health and wellbeing for all	Council land	Access	North Somerset Council	Existing revenue budget	Parks Team	Ongoing

Ref	Project name	Project summary	Main Objective	Main focus	Theme	Lead	Funding source	Lead Team	Timescale
33	Managing environmental record keeping in North Somerset and across the region	Investigate development of Council's own recording and data management service (GIS based) for recording notable fauna and flora, in order to help inform priorities for improving connectivity/quality e.g. dormice and woodland connectivity. Work with regional parties to also consider a regional record centre	Health and wellbeing for all	Planning policy	Biodiversity	North Somerset Council	Grant funding will be required	Natural Environment Team	Medium term
34	Pesticide use reduction	Review council's pesticide usage and set target to reduce pesticide use by 2030.	Health and wellbeing for all	Council land	Biodiversity	North Somerset Council	Existing revenue budget	Parks Team	Short term
35	New orchard planting	Investigate areas for the creation of new community orchards and/or a	Health and wellbeing for all	Council land	Biodiversity	North Somerset Council	Grant funding will be required	Tree Team	Medium term

Ref	Project name	Project summary	Main Objective	Main focus	Theme	Lead	Funding source	Lead Team	Timescale
		Miyawaki/Tiny Forest on council land.							
36	Review Natural capital valuation tools	Investigate Natural Capital valuation tools to help support decision making and investment in green space within North Somerset	Health and wellbeing for all	Council land	Access	North Somerset Council	Existing revenue budget	Natural Environment Team	Medium term
37	Engage with tourism and its interaction with GI	Continue to develop sustainable tourism offer linked to the natural environment in NS	Health and wellbeing for all	Third party land	Access	North Somerset Council	Existing revenue budget	PROW Team	Ongoing
38	Developer contribution update	Secure new GI provision and enhancement through CIL and S106 contributions, the priorities being the strategic GI corridors/assets and NRN.	Health and wellbeing for all	Plannin g policy	Access	North Somerset Council	Existing revenue budget	Natural Environment Team	Short term

Ref	Project name	Project summary	Main Objective	Main focus	Theme	Lead	Funding source	Lead Team	Timescale
39	Adopt Building for Nature standards for new development	Advocate/adopt Building with Nature Standards to ensure that GI is protected and enhanced as part of new development, from the design and master planning stage, through to delivery and management	Health and wellbeing for all	Planning policy	Access	North Somerset Council	Existing revenue budget	Natural Environment Team	Short term
40	Produce Biodiversity Net Gain policy	Produce clear local policy to ensure that BNG is achieved by all qualifying development	Health and wellbeing for all	Planning policy	Access	North Somerset Council	Existing revenue budget	Parks Team	Short term
41	Undertake an open space access assessment	Undertake an up to date open space assessment to ensure access to high quality and accessible open space	Health and wellbeing for all	Council land	Access	North Somerset Council	Existing revenue budget	Parks Team	Medium term
42	Investigate nitrate/phosphate off setting	Identify sensitive nitrate/phosphate receptor sites and zones of influence.	Health and wellbeing for all	Planning policy	Access	North Somerset Council	Existing revenue budget	Parks Team	Medium term

Ref	Project name	Project summary	Main Objective	Main focus	Theme	Lead	Funding source	Lead Team	Timescale
		Identify potential zones and sites for offsetting							
43	Identify missing links in the Public Rights of Way Network	Overlay PROW map with GI opportunity areas. Identify key gaps in the ROW network. Set a framework for creating links and access opportunities	Health and wellbeing for all	Council land	Access	North Somerset Council	Existing revenue budget, funding from Parish Councils, S106 funding	PROW Team	Short term
44	Wildlife friendly gardens	Promote and support wildlife friendly gardening within private gardens and school grounds; bird boxes/hedgehog runs etc for new builds	Health and wellbeing for all	Council land	Access	North Somerset Council	Existing revenue budget	Parks Team	Ongoing
45	Support community groups with GI improvements	Engage with key community groups, parish council, voluntary sector and private sector organisations who would be able to deliver biodiversity	Health and wellbeing for all	Council land	Access	North Somerset Council	Existing revenue budget	Parks Team	Ongoing

Ref	Project name	Project summary	Main Objective	Main focus	Theme	Lead	Funding source	Lead Team	Timescale
		enhancements within their land holdings.							
46	s106/CIL projects	To continue to develop and deliver projects funded by s106 and CIL and to prepare a pipeline of projects	Health and wellbeing for all	Council land	Access	North Somerset Council	s106/CIL	Parks Team	Ongoing
47	Infrastructure survey of parks and open spaces	To carry out a condition survey of parks an open spaces infrastructure	Health and wellbeing for all	Council land	Access	North Somerset Council	Existing revenue budget	Parks Team	Short term
48	National awards engagement	Seek appropriate awards to demonstrate high quality green infrastructure management of parks and open spaces e.g. Green Flag, in bloom etc	Health and wellbeing for all	Council land	Access	North Somerset Council	Existing revenue budget	Parks Team	Ongoing

Ref	Project name	Project summary	Main Objective	Main focus	Theme	Lead	Funding source	Lead Team	Timescale
49	Environment Land Management Scheme engagement	Identify ways in which to bring the Council's land under this scheme, where appropriate; and to support local landowners when possible	Health and wellbeing for all	Council land	Access	North Somerset Council	Existing revenue budget	Natural Environment Team	Medium term
50	Continue to engage with Rights of way maintenance and improvement Volunteers	To continue to identify projects which can be undertaken on the PROW Network by Woodspring Ramblers Association	Health and wellbeing for all	Council land	Access	North Somerset Council	Existing revenue budget	PROW Team	Ongoing
51	Engage with Active Travel Links programme	Support the Active Travel project by helping incorporate high quality GI	Health and wellbeing for all	Council land	Access	North Somerset Council	Highways funding	Natural Environment Team	Ongoing
52	Tree canopy increase	Investigate options for increasing tree canopy in North Somerset	Greater resilience to climate change	Council land	Biodiversity	North Somerset Council	Existing revenue budget	Tree Team	Long term

Ref	Project name	Project summary	Main Objective	Main focus	Theme	Lead	Funding source	Lead Team	Timescale
53	Parks improvement plan	Develop a strategy for our parks and play areas which reflects contemporary needs, enhances community engagement, considers new ways for delivery and raises more income	Health and wellbeing for all	Council land	Open space	North Somerset Council	Existing revenue budget	Parks Team	Short term0
54	Iconic landscapes - iconic trees; protecting our levels and moors trees	This project will identify iconic levels and moors trees and will develop management programme to protect them for future generations	Create and maintain valued healthy landscape	Council land	Water	North Somerset Council	s106	Tree Team	Medium term
55	GI opportunities for water - improving the connectivity and quality of GI in North Somerset - see Appendix 4	The GI strategy highlights some specific issues and opportunities for improving blue GI, as well as existing projects, drawing on various sources including: existing Bristol Avon Catchment	Greater resilience to climate change	Third party land	Water	Landowners working with a range of partners	A range of funding options	Flood Risk Team	Ongoing

Ref	Project name	Project summary	Main Objective	Main focus	Theme	Lead	Funding source	Lead Team	Timescale
		Partnership (BACP) projects, WFD water quality data, the Nature Recovery Network (NRN) and Environment Agency WWNP (Riparian Woodland Potential and Floodplain Woodland Planting Potential).							
56	GI opportunities for woodland - improving the connectivity and quality of GI in North Somerset - see Appendix 4	The GI strategy highlights some specific opportunities for improving the connectivity and quality of woodland habitat, drawing on various sources including SSSI condition assessment, NRN data (which utilised the Natural England Habitat Natural England Habitat Network1 dataset), as well as dormouse records	Improved and better-connected ecological networks	Third party land	Biodiversity	Landowners working with a range of partners	A range of funding options	Tree Team	Long term

Ref	Project name	Project summary	Main Objective	Main focus	Theme	Lead	Funding source	Lead Team	Timescale
57	GI opportunities for grassland - improving the connectivity and quality of GI in North Somerset - see Appendix 4	The GI strategy highlights some specific opportunities for improving the connectivity and quality of grassland habitat, drawing on various sources including SSSI condition assessment, NRN data (which utilised the Natural England Habitat Network mapping ²) and the strategic GI corridors developed as part of this strategy.	Improved and better-connected ecological networks	Third party land	Biodiversity	Landowners working with a range of partners	A range of funding options	Parks Team	Ongoing
58	GI opportunities for access - improving the connectivity and quality of GI in North Somerset - see Appendix 4	The GI strategy highlights opportunities to improve key strategic access routes	Health and wellbeing for all	Third party land	Access	Landowners working with a range of partners	A range of funding options	PROW Team	Ongoing

Ref	Project name	Project summary	Main Objective	Main focus	Theme	Lead	Funding source	Lead Team	Timescale
59	Green Social Prescribing project	Working with the BNSSG Clinical Commissioning Group to increase 'green social prescribing' across the area	Health and wellbeing for all	Council land	Access	BNSSG	BNSSG	Parks Team	Short term

APPENDICES 1 - 7

Contents

Appendix 1: North Somerset Council internal consultation summary

Appendix 2: Policy context

Figure 8 WENP proposed NRN

Figure 9 Map of LSOA's in the West of England, categorised into greenspace types

Figure 10 IMD in North Somerset

Appendix 3: GI Datasets and maps by theme

Figure 11 Mapping of strategic GI by theme: water

Figure 12 Mapping of strategic GI by theme: biodiversity and habitats 1a

Figure 13 Mapping of strategic GI by theme: biodiversity and habitats (priority Habitat)

Figure 14 Mapping of strategic GI by theme: (National tree map)

Figure 15 Mapping of strategic GI by theme: Accessible open space and access routes

Figure 16 Mapping of strategic GI by theme: food growing

Figure 17 Mapping of strategic GI by theme: heritage and landscape

Figure 18 Mapping of strategic GI by theme: SAM, historic parks, CA, NT and AONB

Figure 19 Mapping of strategic GI by theme: heritage and landscape

Appendix 4: GI opportunities

Figure 20 NS green infrastructure Water opportunities

Figure 21 groundwater status

Figure 22 EA flood zone 2 and 3

Figure 23 EA working with nature processes

Figure 24 NS green infrastructure woodland opportunities

Figure 25 NS dormouse records

Figure 26 NS green infrastructure grassland opportunities

Figure 28 Potential to improve strategic access routes

Figure 29 access to open space

Appendix 5: NSC rewilding areas

Appendix 6: funding opportunities for GI

Appendix 7: examples of natural capital accounting tools

APPENDIX 1: North Somerset Council Officer Consultation Summary

1.0 Overview

Council officers were asked to complete a consultation exercise as part of the North Somerset Green Infrastructure Strategy preparation.

Firstly, this helped to ensure that the data collected to inform the strategy was as accurate as possible. Officers were therefore able to verify, correct and add data as necessary before this draft was finalised.

The data in this strategy will undergo further scrutiny during the public consultation stage when it is anticipated that individuals, volunteer organisations and National and Regional bodies will contribute further information which will be added to update the document.

Secondly, Officers were also invited to provide their views and share their knowledge on a range of issues including partnerships and projects opportunities; deficiencies & gaps with provision and quality and opportunities to enhance green infrastructure. This exercise helped ensure that this draft document is as aware as possible about issues prior to public consultation, when it is anticipated that further information will be provided by the community to strengthen the strategy's approach.

The following summarises these findings.

Water and Flood Risk

Partnerships and Projects

- Aspiration for a marine lake at Weston Super Mare for open swimming and other water activities.
- Discussions are ongoing now within the Council and EA around natural flood management across the District.
- LFRMS (local flood risk management strategy) have a list of vulnerable villages where schemes are to be put in place to reduce risk in the future.
- Bristol Avon Catchment Plan
- Wessex Water are developing Drainage Waste Management Plans.
- Flood attenuation scheme at the old airfield new development at Weston Super Mare.
- Natural England's pond projects for GCN district licencing.

Deficiencies & Gaps with provision and quality

- Water quality for invertebrate populations is important, especially sites that aren't SSSIs which are monitored. There is a particular issue with water pollution in Nailsea within existing developments.
- Groundwater quality.

Opportunities to enhance water/blue GI

- Develop a sustainable drainage guide (Bristol example).
- Develop policy statements on maintaining open watercourse and no culverting. Also reducing paving over front gardens to create runoff and flooding (RHS have a guide).

- Need for awareness and financial benefit landowners to sensitivity manage bankside habitats (to protect notable habitats and species especially the water vole). Potentially through targeted ELS schemes and mink trapping projects.

Open spaces, PROW and the National Cycle Network

Partnerships and Projects

- The England Coastal Path (currently being determined by Secretary of State). Will run from River Avon at Avonmouth to River Axe at Brean Down.
- New project to create open space on the former royal pier hotel in Weston called 'Sea Park'. The Council are currently trying to acquire the land, and the project will feature in the placemaking strategy for Weston.
- Strawberry Line Extension from Yatton to Clevedon (consultation is underway, development and opened in stages as funding is secured).
- Rights of Way Improvement Plan is currently being revised.
- The new development at the old airfield in Weston will have new open space and access routes.

Deficiencies & Gaps with provision and quality

- Always be deficiencies and gaps within PROW network.
- Deficiency of routes for horses and cyclists.
- Too much amenity grassland and that many people would prefer to have accessible natural green spaces.
- More areas should be considered for biodiversity net gain.

Opportunities to enhance open spaces, PROWs and National Cycle Network

- Revised ROWIP and more working with parish councils to reduce gaps in PROW network.
- Create Country Parks to mitigate for areas of development. Hopefully this will include increasing accessibility through PROW network.
- PROW and Countryside parks are a potentially more attractive option over manicured parks.
- Opportunities to plant trees (particularly street trees) and hedgerows along access routes.
- Community Infrastructure Levy, S106, local transport plan, capital funding need to be sourced to help achieve these future aims especially for larger existing open spaces.
- Lots of opportunities to transform parks and amenity green spaces through establishment of wildflower meadows, priority habitats and rewilding.
- Potential for new developments to include these within the planning stages (needs to be included within the new local plan).

Biodiversity and Habitats

Partnerships and Projects

- Current rewilding project taking place in existing parks and open spaces. Volunteering heavily involved in the project which is being funded with a lottery grant.
- Worlebury Woods has an outstanding felling licence waiting for review.

Deficiencies & Gaps with provision and quality

- We are in a recognised ecological emergency.
- Farming practices are negatively impacting habitats.
- Lack of priority habitat data.
- Invasive species.
- The priority habitats data is old, and misleading.

Opportunities to enhance biodiversity

- Woodland management, particularly with Ancient Natural Semi Woodland.
- Environmental management schemes that promote late harvesting to protect ground nesting birds and brown hare.
- Mink trapping and landowner liaison to effect positive management of bankside vegetation.
- Landowner liaison to improve hedgerow connectivity between woodlands.
- Consider areas for nursery growing for both plants and trees.
- Undertake an updated BREC

Food Growing Areas

Partnerships and Projects

- None identified.

Deficiencies & Gaps with provision and quality

- Organic food production is indicated as the most sustainable land use.

Opportunities to enhance food growing

- Good hedgerow boundaries and shelter belts of trees on northern aspects would support a favourable microclimate for crops and pollinating insects.

Heritage and Landscape

Partnerships and Projects

- Worlebury Camp Hillfort
- Middle Engine Pit
- Banwell Bypass
- The England Coastal Path

Deficiencies & Gaps with provision and quality

- Impact of woodland creation of archaeological remains.

Opportunities to enhance heritage and landscape

- Green spaces and heritage can go hand in hand with preservation and enhancement of heritage assets being beneficial to landscape and public benefit.
- Change of land use/rewilding can be a positive enhancement to the setting of heritage assets.

Council Owned Land

Partnerships and Projects

- Possible road upgrades on the highway surrounding Bristol Airport and Worle Station.

Opportunities to enhance council owned land

- Lots of opportunities with the rewilding programme being the first step (some public resistance on this).
- Enhancement of botanical interest of grassland through sensitive management.
- New developments on council land should include GI such as swift boxes and hedgehog corridors.

Third Party Land

Challenges and Opportunities

- Money/funding.
- Lack of education.
- Landowners disinterest especially for PROW (need cash incentive or compensation)
- Opportunities for land management to reduce flood risk.
- Opportunity to create sacrificial wetland areas in strategic locations to capture overland flows and sediment.
- Opportunity to create upland woodland planting to block upland drains/moorland.
- Opportunity to teach good soil management.

Partnerships and Projects

- Hinckley Point
- All housing development should require better landscaping and ecology but there is resistance.
- Tutshill Sluice Cycle Route.
- Natural England GCN project
- Banwell bypass bat project
- England Coastal Path
- Strawberry Line Extension

Other

What do you think the potential constraints are to enhancing the GI network in North Somerset?

- Education and a lack of incentives to change out of date rural practices.
- Increased development within the District putting pressure on the biodiversity of the area.
- Climate Emergency.
- Funding to identify sites with potential to be restored to priority habitats.

Further Comments

- Would need to ensure that Sustainable Transport in Local Transport Plan is cross referenced in this GI Strategy.

APPENDIX 2: POLICY CONTEXT

1.0 Overview

This appendix provides a review of the most relevant national and local policies and strategies related to the Strategy, which have been considered in developing the methodology and findings of the Study. Policies and strategies are subject to regular change, therefore the summary provided in this section was correct at the time of writing. NSC reserve the right to change and update this section as policies change.

It also includes a summary of IMD and health within North Somerset (Section 5).

2.0 National Context

2.1 National Planning Policy Framework (NPPF) (February 2019) and National Planning Practice Guidance (NPPG).

NPPG is a web-based resource which brings together guidance on various planning topics in one place. It largely draws on the government's planning policies within the NPPF.

The NPPF sets out the Government's planning policies for England and how they should be applied. The NPPF must be adhered to in the preparation of local and neighbourhood plans, and is a material consideration in planning decisions.

The concept of green infrastructure (GI) is now firmly embedded in national policy with the NPPF requiring local planning authorities to set out a strategic approach in their Local Plans, planning positively for the creation, protection, enhancement and management of networks of biodiversity and green infrastructure, and providing net gains for biodiversity¹.

The NPPF contains the following references that relate to green infrastructure and open spaces:

- **Para 7** - The purpose of the planning system is to contribute to the achievement of sustainable development. At a very high level, the objective of sustainable development can be summarised as meeting the needs of the present without compromising the ability of future generations to meet their own needs.
- **Para 96** - Access to a network of high-quality open spaces and opportunities for sport and physical activity is important for the health and well-being of communities. Planning policies should be based on robust and up-to-date assessments of the need for open space, sport and recreation facilities (including quantitative or qualitative deficits or surpluses) and opportunities for new provision. Information gained from the assessments should be used to determine what open space, sport and recreational provision is needed, which plans should then seek to accommodate.
- **Para 97** - Existing open space, sports and recreational buildings and land, including playing fields, should not be built on unless:
 - a) an assessment has been undertaken which has clearly shown the open space, buildings or land to be surplus to requirements; or
 - b) the loss resulting from the proposed development would be replaced by equivalent or better provision in terms of quantity and quality in a suitable location; or
 - c) the development is for alternative sports and recreational provision, the benefits of which clearly outweigh the loss of the current or former use.

- **Para 98** - Planning policies and decisions should protect and enhance public rights of way and access, including taking opportunities to provide better facilities for users, for example by adding links to existing rights of way networks including National Trails.
- **Para 149** - Plans should take a proactive approach to mitigating and adapting to climate change, taking into account the long-term implications for flood risk, coastal change, water supply, biodiversity and landscapes, and the risk of overheating from rising temperatures. Policies should support appropriate measures to ensure the future resilience of communities and infrastructure to climate change impacts, such as providing space for physical protection measures, or making provision for the possible future relocation of vulnerable development and infrastructure.
- **Para 170** - Planning policies and decisions should contribute to and enhance the natural and local environment.

2.2 The Natural Environment White Paper (NEWP) The Natural Choice: securing the value of nature (2011)

The White Paper² recognised that a healthy natural environment is the foundation of sustained economic growth, prospering communities and personal wellbeing. It sets out how the value of nature can be mainstreamed across our society by facilitating local action; strengthening the connections between people and nature; creating a green economy and showing leadership in the EU and internationally.

It responds to the 2010 independent review of England’s wildlife sites and ecological network, chaired by Professor Sir John Lawton, which identifies the need for more, better and bigger joined spaces for nature.

2.3 Biodiversity 2020: A strategy for England’s wildlife and ecosystem services, (August 2011)

This biodiversity strategy for England builds on the Natural Environment White Paper and sets out the strategic direction for national biodiversity policy to implement international and EU commitments.

The vision for England is: ‘By 2050 our land and seas will be rich in wildlife, our biodiversity will be valued, conserved, restored, managed sustainably and be more resilient and able to adapt to climate change, providing essential services and delivering benefits for everyone’.

The mission of this strategy is to ‘halt overall biodiversity loss, support healthy well-functioning ecosystems and establish coherent ecological networks, with more and better places for nature for the benefit of wildlife and people’. The strategy contains four outcomes to be achieved by the end of 2020. These are:

Habitats and ecosystems on land (including freshwater environments)

By 2020 we will have put in place measures so that biodiversity is maintained and enhanced, further degradation has been halted and where possible, restoration is underway helping to deliver more resilient and coherent ecological networks as well as healthy and well-functioning ecosystems which can deliver multiple benefits for wildlife and people too.

Marine habitats, ecosystems and fisheries

By 2020 we will have put in place measures so that biodiversity is maintained, further degradation has been halted and where possible, restoration is underway, helping deliver good environmental status and our vision of clean, healthy, safe productive and biologically diverse oceans and seas.

Species

By 2020, we will see an overall improvement in the status of our wildlife and will have prevented further human-induced extinctions of known threatened species.

People

By 2020, significantly more people will be engaged in biodiversity issues, aware of its value and taking positive action.

2.4 The 25 Year Environment Plan

This 25 Year Environment Plan (25 YEP) sets out government action to help the natural world regain and retain good health. It aims to deliver cleaner air and water in our cities and rural landscapes, protect threatened species and provide richer wildlife habitats. It calls for an approach to agriculture, forestry, land use and fishing that puts the environment first.

The 25-year goals are:

1. Clean air.
2. Clean and plentiful water.
3. Thriving plants and wildlife.
4. A reduced risk of harm from environmental hazards such as flooding and drought.
5. Using resources from nature more sustainably and efficiently.
6. Enhanced beauty, heritage and engagement with the natural environment.

Actions/policies are identified around six key areas: Using and managing land sustainably; Recovering nature and enhancing the beauty of landscapes; Connecting people with the environment to improve health and wellbeing; Increasing resource efficiency, and reducing pollution and waste; Securing clean, productive and biologically diverse seas and oceans; Protecting and improving the global environment.

The Nature Recovery Network (NRN) is a key policy commitment in the 25 YEP. The NRN will benefit people and wildlife by increasing, improving and joining-up wildlife-rich places across England. It will create or restore 500,000 hectares of wildlife habitat outside protected sites, more effectively linking existing protected sites and landscapes, as well as urban green infrastructure (such as trees, hedgerows, parks, fields, forests) and urban blue infrastructure (such as rainwater tanks, bioswales, rivers, canals, ponds, wetlands, and floodplains). This landscape-scale approach to restoring nature was recently demonstrated by Natural England's recent designation of the Purbeck Heaths National Nature Reserve (NNR) in Dorset.

The forthcoming **Environment Bill (2020)** will place the 25 Year Environment Plan on statutory footing. A key outcome from this will include a requirement for all areas in England

to establish Local Nature Recovery Strategies (LNRSs). This will help bring a broad range of groups together – from farmers to businesses to local communities – to deliver priorities for nature recovery at a local and national level. Five local authorities (Cornwall, Buckinghamshire, Greater Manchester, Northumberland and Cumbria) have been selected to set up LNRSs pilot studies to help map the most valuable sites and habitats for wildlife in their area and identify where nature can be restored. The pilots will also help kick-start the creation of over a million acres of habitats for wildlife.

2.5 Pollinator Strategy (2014)

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 outlines actions to support and protect the many pollinating insects which contribute to our food production and the diversity of our environment. It is a shared plan of action which looks to everyone to work together and ensure pollinators' needs are addressed as an integral part of land and habitat management.

In particular the Strategy asks local authorities to take a lead across many of their work areas and duties, including their role in local planning and also as managers of public and amenity spaces, brownfield sites, schools, car parks, roadside verges and roundabouts.

The Strategy vision is: *To see pollinators thrive, so they can carry out their essential service to people of pollinating flowers and crops, while providing other benefits for our native plants, the wider environment, food production and all of us.*

The independent scientific review of the published evidence commissioned by Defra in 2013³, identified the loss of flower-rich habitat as the likely primary cause of the recorded decline in diversity of wild bees and other pollinating insects.

2.6 Living with beauty: Promoting health, wellbeing and sustainable growth (2020)

This report, published by the Building Better, Building Beautiful Commission, recommends how to promote and increase the use of high-quality design for new build homes and neighbourhoods.

The report proposed three aims for the planning system as a whole: Ask for Beauty; Refuse Ugliness; and Promote Stewardship. Beauty is considered at three scales: Beautiful buildings; Beautiful places (of which GI is a key part); and Beautifully placed.

Policy proposals are made in a number of areas, including Nature: re green our towns and cities, which includes:

- Urban development should be part of the wider ecology. Green spaces, waterways and wildlife habitats should be seen as integral to the urban fabric.
- The government should commit to a radical plan to plant two million street trees within five years, create new community orchards, plant a fruit tree for every home and open and restore canals and waterways. This is both right and aligned with the government's aim to eradicate the UK's net carbon contribution by 2050. It should do this using the evidence of the best ways to improve well-being and air quality.
- Green spaces should be enclosed and either safely private or clearly public.

- The NPPF should place a greater focus on access to nature and green spaces – both existing and new – for all new and remodelled developments.

2.7 Buglife and B-lines

Buglife is charity with the aim of halting the extinction of invertebrate species and to achieve sustainable populations of invertebrates.

Get Britain Buzzing: a Manifesto for Pollinators (2014)

The Manifesto outlines 7 key principles and 27 actions to arrest the alarming decline in UK pollinator populations. This manifesto highlights the dire state of many of our pollinators and the need to take action now, otherwise our children and grandchildren will not be able to enjoy and rely on the many benefits these species provide. The Manifesto is clear that we need ‘sustainable populations of all pollinators’ and that it is essential to work towards the 7 principles if we are to save and sustain our pollinators. These are:

1. All pollinators valued for the service that they provide.
2. Our pollinator populations properly monitored and understood.
3. Pesticide use that harms pollinators reduced.
4. Wildflower rich landscapes restored – (B-lines established).
5. Declines in rare and threatened pollinator species reversed.
6. Places for pollinators planned around people.
7. Wild pollinators protected from imported parasites and diseases.

B-Lines

The B-Lines Programme is working to develop a network of wildflower-rich areas across the UK helping to support our native pollinators and helping them to move more easily around the country. B-Lines is being developed as a response to recommendations made in Sir John Lawton’s ‘Making Space for Nature’ review; identifying and creating linkages between our key wildlife sites. B-Lines also provides a framework to contribute towards the National Pollinator Strategy.

The B-Lines are being mapped across the UK in partnership with local authorities, Local Nature Partnerships, Statutory Agencies and other conservation partners. B-Lines are identified as 3 km wide linear pathways which link together existing important wildflower-rich areas (e.g. SSSI, Local Wildlife Sites, Local Nature Reserves, nature reserves, BAP habitats) – these habitat areas forming the foundations of the B-Lines network. B-Lines aims to create and restore at least 150,000 hectares of flower-rich habitat across the UK.

The B-lines mapping has been utilised in informing the priorities/opportunities within this GI Strategy.

2.8 National perspectives on the value of open spaces and physical activity to health and wellbeing

The National Institute for Health and Care Excellence (NICE) have pointed out that “physical activity is not only fun and enjoyable, it is essential for good health, helping to prevent or manage over 20 conditions and diseases. This includes heart disease, diabetes, some cancers and obesity. It can also help improve people’s mental health and wellbeing⁴.”

NICE Local Authority Briefing – Public Health

Supporting people of all ages to be more physically active can help local authorities meet their new public health responsibilities. Specifically, it will impact on a range of indicators identified in the public health and the adult social care outcomes frameworks including:

- Use of green space for exercise/health reasons
- Child development
- Excess weight in children and adults
- Proportion of physically active and inactive adults
- Self-reported wellbeing and health-related quality of life
- Falls and injuries in the over-65s
- Mortality from cardiovascular diseases (including heart disease and stroke), cancer and respiratory diseases.

Public Health England has provided a health equity briefing: *Local action on health inequalities: Improving access to green spaces*⁵.

Public Health England – health equity briefing: Local action on health inequalities: Improving access to green spaces. Summary of key points:

- There is significant and growing evidence on the health benefits of access to good quality green spaces. The benefits include better self-rated health; lower body mass index; overweight and obesity levels; improved mental health and wellbeing; increased longevity.
- There is unequal access to green spaces across England. People living in the most deprived areas are less likely to live near green spaces and will therefore have fewer opportunities to experience the health benefits of green space compared with people living in less deprived areas.
- Increasing the use of good quality green space for all social groups is likely to improve health outcomes and reduce health inequalities. It can also bring other benefits such as greater community cohesion and reduced social isolation.
- Local authorities play a vital role in protecting, maintaining and improving local green spaces and can create new areas of green space to improve access for all communities. Such efforts require joint work across different parts of the local authority and beyond, particularly public health, planning, transport and parks and leisure.

3.0 Regional context

3.1 The West of England Nature Partnership (WENP) and Nature Recovery Network (NRN)

The West of England Nature Partnership (WENP) is a cross-sector partnership working to restore the natural environment in the West of England through embedding the value of nature in decision making across spatial planning, public health and economic development. Established in 2012, WENP is the designated Local Nature Partnership (LNP) for the West of England (Bristol City, South Gloucestershire, North Somerset and Bath & North East Somerset). LNPs are a key commitment from the 2011 Government White Paper, *The Natural Choice: Securing the Value of Nature*, which recognised the need for a more joined-up approach to reverse the loss of biodiversity and degradation of ecosystems

The vision is of a thriving and well-connected natural environment in the West of England that underpins a healthy and resilient society and economy.

The West of England Nature Partnership (WENP) is working to develop a regional Nature Recovery Network for the West of England, aligning with shared principles developed across the South West (by the South West Local Nature Partnerships) to ensure coherence and strengthened networks across the wider region. This is in accordance with Government’s 25 Year Environment Plan, which includes a commitment to “develop a Nature Recovery Network to protect and restore wildlife and provide opportunities to re-introduce species that we have lost from our countryside.”

WENP’s proposed NRN (mapping), has been used as the basis for identifying key GI assets, corridors and opportunities for improvement within this GI Strategy. The NRN map is intended as a living map, as new mapping tools and principles emerge at the national level. The development and delivery of a NRN plan is the next step in the process.

Figure 8 WENP Proposed NRN



3.2 West of England Nature Partnership (WENP) Greenspace Classification

This report takes a landscape approach that maps landscape quality. It utilises an approach pioneered in the Greater Manchester area by Dennis et al. (2018) to characterise census reporting units across the West of England into seven ‘greenspace’ types, based upon their composition of land use and land cover, and investigate the distribution of different land use types across the region. These greenspace types differ with respect to their value to wildlife,

their accessibility to people, and their capacity to deliver benefits for our mental and physical wellbeing.

It is intended to improve understanding around how greenspaces and other land uses are distributed across the West of England, and thus could be used as an additional piece of evidence in future planning and development of green infrastructure to maximise the benefits provided to nature and to people. The report includes recommendations on how the greenspace types can be used to inform actions to benefit people and wildlife. It is intended to be complementary to the WoE Joint Green Infrastructure Strategy, and existing evidence bases used in planning.

All land in the WoE was mapped into one of the following seven land use categories:

- Amenity – Urban greenspace without a specific function, including riparian land and road verges
- Brownfield – Land that is not currently in use or is undergoing a change in function.
- Gardens – Privately owned gardens.
- Institutional – Privately-owned land belonging to institutions including schools, universities and religious institutions.
- Parks & recreation – Publicly-accessible parks, sports grounds and recreational spaces, also including allotments and cemeteries.
- Rural – Land in rural areas, predominantly farmland but also including forests and any other seminatural areas.
- Urban other – Urban land which is covered by hard surface, including roads, buildings and car parks.

Small geographical areas (Lower Layer Super Output Areas (LSOAs)) in the WoE were then categorised into one of the following seven greenspace types, based upon the relative proportions of the seven land uses within it (shown in Figure 9 below):

- Dense Greyscape
- Inner Suburbs
- Outer Suburbs
- Amenity Suburbs
- Parklands
- Peri-urban Fringe
- Countryside

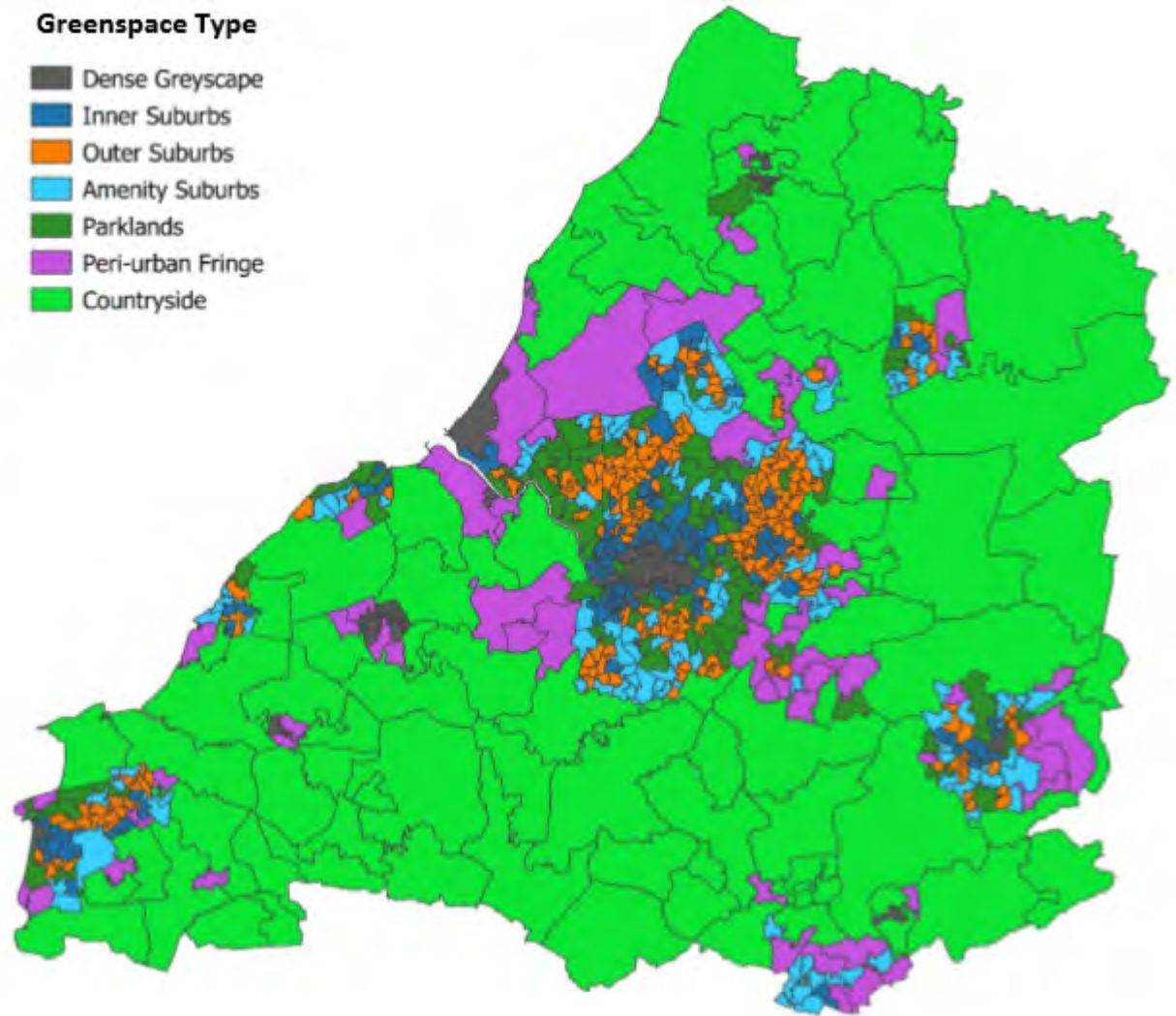


Figure 9 - map of the LSOAs in the West of England, categorised into greenspace types

The report recommends possible interventions for increasing the benefits delivered by each greenspace type for biodiversity, and human health and wellbeing, as shown in Table 5 below. These interventions provide a good basis for planning and implementing GI improvements, and are set out in the table below:

Table 5 - possible interventions to improve GI by greenspace type for biodiversity, and human health and wellbeing.

Greenspace type	Suggested possible interventions	
	For biodiversity	For human health & wellbeing
Dense Greyscape	Increase number of plants and greenspace using street trees, hanging baskets, planters, rooftop gardens, and pocket parks where possible.	Pocket parks could be used to provide small areas of greenspace in this greenspace type. Any increase in the number of plants and the provision of greenspace is likely to benefit mental and physical health, and may improve local air quality.
Inner Suburbs	Improve management of private gardens for wildlife, especially through communication with the public. Interventions for Dense Greyscape also applicable.	Increase access to publicly accessible greenspaces, which are used for different functions than private gardens, by providing good (active) transport links to existing greenspaces. Interventions for Dense Greyscape also applicable.
Outer Suburbs	Improve management of private gardens for wildlife, especially through communication with the public.	Increase access to publicly accessible greenspaces, which are used for different functions than private gardens, by providing good (active) transport links to existing greenspaces.
Amenity Suburbs	Improve management of private gardens and amenity greenspaces for wildlife. In amenity areas interventions could include letting areas grow wild, mowing grass less frequently, sowing wildflower seeds, and tree planting.	Ensure accessibility of amenity greenspaces, which may not be easily accessed by all members of the community due to poor transport links, cultural barriers etc. Sowing wildflower seeds and tree planting can improve the aesthetic appeal of areas that cannot be directly accessed.

Greenspace type	Suggested possible interventions	
	For biodiversity	For human health & wellbeing
Parklands	Improve management of parks and public recreation spaces by sowing wildflower strips, and increasing the presence hedgerows and small scrub and wooded areas.	Improve the condition of existing parks. Marked jogging/cycling routes and outdoor exercise equipment can increase the value of parks for health. Improvements for biodiversity can also improve the appeal of parks and increase usage. Sufficient lighting could improve safety.
Peri-urban Fringe	Improve the connectivity between urban and rural landscapes through habitat creation and improvement, evidenced by the WoE Nature Recovery Network . Hedgerows could be an effective connection urban areas into rural areas. Fences and walls should be made permeable for non-flying animals.	Ensure there are sufficient paths and public rights of way for people to access the countryside directly from their home by walking, jogging or cycling. Existing rights of way should be clearly marked and protected, while access to the countryside must also be prioritised in new housing developments in the peri-urban fringe locations.
Countryside	The biodiversity value of agricultural land through a variety of interventions including wildflower-rich field margins, hedgerows, joined-up woodland fragments, lower stocking densities etc. Conservation evidence provides evidence-based interventions for farmland (https://www.conservationevidence.com/). The WoE Nature Recovery Network provides an evidence base for increasing connectivity of habitats. National agricultural policy, including the forthcoming Environmental Land Management Schemes, will be important in improving the value of farmland for biodiversity.	As for the peri-urban fringe, clearly marked paths and public rights of way are important for allowing people access to the countryside. Where possible these should pass through woodland and other semi-natural habitat patches, rather than just arable land and pasture. Additionally, the presence of amenity greenspaces can be lacking in rural areas. Improving the provision of these can increase people's use of greenspace.

3.3 West of England (WofE) Joint Green Infrastructure Strategy (JGIS) 2020-2030

The JGIS, led by the West of England Combined Authorities (WECA), is owned by the five authorities – WECA, Bath and North East Somerset, Bristol City, North Somerset and South Gloucestershire councils. It sits alongside and helps facilitate the delivery of other regional and local plans and strategies. These include the Local Industrial Strategy, Joint Local Transport Plan, Local Cycling and Walking Infrastructure Plan, West of England sub regional strategies and local and spatial plans, GI strategies and supplementary planning documents. The overall aim of the West of England JGIS programme is to secure investment in GI planning and provision, similar to that of other infrastructure. It evidences the need and use of natural solutions to address the climate emergency and declining biodiversity, as well as health and other benefits for people, so that sustained investment in the natural environment and GI can be secured. It also provides mapped data (which includes the WENP proposed Nature Recovery Network, and 22 GI Areas), which can be used to identify existing GI and opportunities across a range of scales, to support the 8 outcomes set out below.

The following nature based outcomes are sought as part of an integrated approach to GI in the West of England; Improved and better-connected ecological networks:

- **Improved and better-connected ecological networks:** protect, enhance and expand coherent, thriving and resilient ecological networks that deliver net gains in biodiversity

and ecosystem services, including the creation of bigger, better, more and joined-up woodland, grassland and wetland habitats to achieve the ambitions of the West of England Nature Recovery Network.

- **Greater resilience to climate change:** Provide natural solutions to build resilience against the impacts of climate change including use of well-designed Green Infrastructure to stabilise slopes and attenuate flood water, absorb carbon, and increased use of trees to reduce urban heating.
- **Sustainable water management:** Optimise and improve the use of Green Infrastructure to deliver an improved water environment by working with natural processes to help reduce flood risk, manage drought, improve water quality and improving connectivity to reduce the loss and quality of aquatic habitats and wildlife.
- **Health and wellbeing for all:** Improve the network of active travel routes and accessibility to green spaces to support healthy lifestyles and mental wellbeing, and provide more opportunities for people to connect with landscape and nature, and addressing inequalities in provision.
- **Create and maintain sustainable places:** New development which maximises the multiple benefits of Green Infrastructure in delivering resilient, healthy and environmentally friendly places and a net gain in natural capital by investing in Green Infrastructure for the long term.
- **Create and maintain valued healthy landscape:** Design and deliver high quality Green Infrastructure that improves local sense of place and protects and enhances landscape character and the natural, cultural and heritage services that they provide
- **Support sustainable and local food production:** Increase opportunities for local food production in urban and rural areas and increase food sovereignty by, for example, protecting the best and most versatile agricultural land and enhancing our pollinator network.
- **Build a resilient economy:** Create attractive areas for investment and job creation, and support the environmental resilience of economic sites by enhancing Green Infrastructure relating to housing, businesses and other associated infrastructure.

To implement the JGIS and achieve the outcomes the five authorities will apply the following principles:

- **Educate:** Ensure that the multi-functional benefits of Green Infrastructure including contribution to human health and wellbeing are better understood and clearly recognised by authorities, agencies and other partners. Resulting in, increased allocation of funding for GI and a Green Infrastructure focus integrated into the planning and development process, through using the tools and metrics required by national legislation.
- **Embed:** Apply a natural capital approach in accordance with national legislation and guidance to seek to ensure that new development delivers a net gain in natural capital whilst protecting irreplaceable habitats, and support the maintenance and enhancement of the strategic Green Infrastructure network.
- **Collaborate:** The authorities, agencies and other partners in their delivery of Green Infrastructure across the West of England will ensure early, continuous and effective engagement with each other.
- **Evidence:** Monitor and keep an up-to-date West of England shared Green Infrastructure and biodiversity evidence base.

- **Invest:** Secure investment in Green Infrastructure through the planning process and other delivery and funding mechanisms to deliver strategic Green Infrastructure priorities and its long term stewardship.
- **Communicate:** Promote wider public understanding of GI and natural capital, the benefits it provides and opportunities to enhance Green Infrastructure in the West of England.

3.4 West of England Local Cycling and Walking Plan 2020-2036

This is a collaborative plan between West of England Councils, West of England Combined Authority and local stakeholders, and proposes £411million of capital investment by 2036. The plan proposes improvements to the walking environments with a focus on local high streets, along with improvements to continuous cycle routes. The aim is to provide high quality infrastructure to allow walking and cycling the preferred option for shorter trips and to access public transport.

The vision is that the West England walking and cycling network is the most coherent, accessible and comprehensive in the UK. Behavioral change is one of the main challenges to overcome in order to achieve this vision but there are many opportunities to overcome challenges. Public opinion shows that there is a high level of public support for walking and cycling improvements, and with the COVID-19 pandemic and climate emergencies being declared these improvements are being high within both national and local governments agendas.

The plan sets out different types of the improvements to be made all of which aim to optimize usability and safety whilst at the same time focusing on user needs and improving the built environment. Across North Somerset, the plan highlights 7 walking and 7 cycle improvement routes which are focused on the towns within the area. These improvement routes have fed into the analysis of green infrastructure within North Somerset.

3.5 Joint Transport Plan 4 – West of England 2020-2036

The Joint Transport Plan has been led by the West of England Combined Authority alongside the four local authorities of Bath & North East Somerset, Bristol, North Somerset and South Gloucestershire. It outlines the vision of a well-connected sustainable transport network across the region for residents, businesses and tourists. Its aim is that the network will offer greater and realistic travel choices making walking, cycling and taking public transport a natural way to travel.

The plan aims to ensure that transport is carbon neutral by 2030 which can only be achieved if there is sizeable shift towards cleaner, greener and more sustainable transport. It will also require a change in the way we travel by reducing reliance on the car and changing behavior.

Five objectives outlined are:

1. Take action against climate change and address poor air quality
2. Support sustainable and inclusive economic growth
3. Enable equality and improve accessibility
4. Contribute to better health, wellbeing, safety and security
5. Create better places

Improving connectivity will create a sustainable transport network that offers greater and realistic travel choices. Along with making trips more seamless, faster, cheaper, cleaner and safer.

Along with the broader challenges of becoming a carbon neutral transport network, there are some key challenges specific to the West of England. This includes:

- There is heavy commuting into central Bristol and other radial routes (in relation to North Somerset; A4 Portway, A370 Weston Super Mare).
- Reliability on the car for town centre commuting.
- Bus and rail use is significantly lower than other UK cities and towns.
- Most business-related travel is by road therefore creating delays on the road network.
- Potential clustering of businesses is limited by the transport network.
- Climate change is impacting on the current transport system including flooding and potholes.

To overcome these challenges the joint transport plan sets out five policies.

1. Provide more public transport options and improve service quality
2. Provide more journeys where public transport is not an option.
3. To use appropriate technological advances to influence and better demand such as through connected and autonomous (driverless) vehicles and pay you as you travel (moving away from owning vehicles).
4. Improve the resilience of the network to provide increased reliability.
5. Enable business clustering and the efficient movement of freight.

These policies are then applied at a broad level across the West of England with different interventions to support delivery the policies. At a local level more specific interventions are detailed which have then fed into the analysis of green infrastructure within North Somerset.

3.6 West of England Local Enterprise Partnership and Local Industrial Strategy

The West of England Local Enterprise Partnership supports business growth and is working to attract new jobs to Bristol, Bath and Weston-super-Mare – and the surrounding countryside. One of their key actions is Growing the green economy.

The WoE LEP Strategy aims to boost productivity in the West of England by creating jobs and increase earning power of people with investment in skills, industries and infrastructure. In line with the National Industrial Strategy it will be based on clean growth (carbon neutral), robust evidence including understanding of impact on natural capital and reducing inequalities. There is an opportunity to enhance GI as part of LIS long term sustainable infrastructure investment, supporting the mutual objective of enhancing natural capital.

3.7 The Severn Estuary Partnership and Strategy for the Severn Estuary 2017

In 1995 the Severn Estuary Partnership was formed to provide support to those who have responsibilities or interests in the estuary and to encourage working together to achieve a more integrated approach to the management of the estuary. The Severn Estuary Partnership is an independent, non-statutory organisation which relies on the support and active participation of its members, as well as a range of individuals and other organisations.

The Severn Estuary Strategy was first produced in 2001 and has now been revised in the context of new and emerging legislation, plans, policies and developments. The 2017 Severn Estuary Strategy presents a new Vision and a series of Principles, Objectives, Outcomes and Actions.

The 2017 Severn Estuary Strategy champions an integrated approach to the sustainable use and enjoyment of the Severn Estuary, under 5 key principles:

1. Achieving a Sustainable Marine Economy
2. Ensuring a Strong, Healthy and Just Society
3. Living within Environmental Limits
4. Promoting Good Governance
5. Using Sound Science Responsibly.

The Strategy aims to ensure an integrated approach for marine planning in the Severn Estuary Region and provides context to inform and support decision-making for a wide range of proposed estuary developments.

3.8 Mendip Hills AONB Partnership and Management Plan 2019 - 2024

AONBs and National Parks were brought into being by the 1949 National Parks and Access to the Countryside Act, and have the same status, and level of protection. AONBs are particularly special landscapes, whose distinctive character and natural beauty are so outstanding that it is in the nation's interest to safeguard them.

'The limestone Mendip Hills with the lakes of the Chew Valley is a stunning landscape of steep slopes and undulating plateau punctuated by spectacular gorges and rocky outcrops. On the hilltops there are hundreds of ancient monuments, whilst on steeper slopes flower rich grasslands and wooded combs offer varied habitats for a wide variety of wildlife.'

In recognition of its special qualities the area has been designated as an Area of Outstanding Natural Beauty (AONB).

The AONB Partnership, the advisory body for the Mendip Hills AONB produces the Management Plan, on behalf of its local authority partners; Somerset County Council, Bath and North East Somerset Council, North Somerset Council, Mendip District Council and Sedgemoor District Council.

The Mendip Hills AONB Management Plan (2019) identifies what is necessary to conserve and enhance the special qualities of the landscape. The Mendip Hills AONB Management Plan is a 'material' consideration in determining planning applications, and at appeals.

Management Plan Vision: The Mendip Hills Area of Outstanding Natural Beauty offers a wealth of opportunities for both people and wildlife and cultural heritage to benefit from the nationally protected landscape. The living landscape conserves and enhances natural beauty, supporting the economy, health and wellbeing of our society.

The Management plan sets out objectives for achieving this vision under 8 themes: Landscape quality; Biodiversity and geodiversity; Historic environment and cultural heritage; Recreation, access and tourism; Natural resources; Land management; Development and Transport; and Participation.

3.9 Forest of Avon Trust Emerging Tree and Woodland Strategy

The Forest of Avon Trust is a charity passionate about the benefits of trees & woodlands and committed to delivering these to people across Bristol & Avon.

The Forest of Avon is part of a national programme of Community Forests across England. So far, well over a million trees have been planted in and around Bristol and many woodlands & access networks have been improved.

The Trust have recently secured funding from the West of England Nature Partnership, Bath & North East Somerset Council and the Woodland Trust to produce an updated Forest of Avon Plan/ Tree & Woodland Strategy for the whole of the West of England sub-region (which

emerged as a strategic project from the preparation of the West of England (WofE) Joint Green Infrastructure Strategy (JGIS) 2020-2030).

3.10 The Bristol Avon Catchment Partnership (BACP) and Bristol Avon Catchment Plan (2016)

BACP is one of over 100 catchment partnerships across England to support the Catchment Based Approach⁶ which embeds collaborative working at a river catchment scale to deliver cross-cutting improvements to our water environments.

The Bristol Avon Catchment in its entirety drains over 2,800km² of Wiltshire, Gloucestershire and Somerset. The Bristol Avon River flows from the headwaters (near Malmesbury) through many Wiltshire towns and eventually enters into the Severn Estuary via the Avon Gorge. The Catchment also encompasses the North Somerset Coastal Streams and the Lower Severn Vale sub-catchments.

BACP was formed in 2012, bringing together a range of organisations and local communities who work together using the Catchment Based Approach to improve the water environment and provide wider benefits for people and nature at a catchment scale.

Their projects map⁷ provides a summary of catchment projects which are completed, ongoing and proposed, which have helped to inform the opportunities identified within this Strategy.

The Bristol Avon Catchment Plan (2016) has the following vision: *The Bristol Avon Catchment is in good health, has Good Ecological Status and is recognised as a valuable asset to society and the local economy.*

The government aims to ensure all waterbodies in England meet good ecological status by 2027. Any waterbody that does not meet good ecological status is classified as failing under the European Union's Water Framework Directive.

These are just some of the water-based challenges within the Bristol Avon catchment that can be addressed more effectively by working together:

- Only 11% of the catchment is classified as having 'good ecological status' - Although this is typical of other catchments in the UK, it demonstrates the scale of the challenge to meet the Water Framework Directive targets.
- 89% fail to meet the targets - Due to factors including physical modification, phosphate levels, sediment load and low fish populations. Some landowners are losing valuable topsoil, nutrients and pesticides. Due to erosion, run-off or leaching; sometimes linked to poor soil structure and compaction
- Heavy rainfall running off rural and urban areas causes surface water and river flooding in specific locations and Tidal flooding continues to be a threat in the lower reaches of the catchment

4.0 Local Context

4.1 NSC Corporate Plan

North Somerset Council's overall vision set out within their Corporate Plan (2020-2024) is for 'An open, fairer, greener North Somerset'.

The Council has three overarching priorities in order to achieve this vision:

- A thriving and sustainable place
- A council which empowers and cares about people
- An open and enabling organisation

This Strategy will help the Council deliver these priorities as follows:

A thriving and sustainable place	How?
A great place for people to live, work and visit	GI helps to create sustainable, biodiverse and attractive places to live – supporting quality of place and quality of life.
Welcoming, safe and clean neighbourhoods	In addition to improving quality of place, GI provides a range of health benefits including providing places for leisure and recreation, and connection with nature. It provides space for communities to come together and take care of the environment around them.
To be a carbon neutral council and area by 2030	GI provides ecosystem services which are essential to tackling the nature and climate emergency. Habitats (including woodland, grassland and wetland) both store and capture carbon, mitigate flooding, and can help improve water quality, including through providing stable soils. They also provide and support biodiversity, which is vital to the maintenance of healthy ecosystems and the many ecosystem services that the natural environment provides, and which are fundamental to our survival.
A transport network that promotes active, accessible and low carbon travel	The provision of a connected GI network can help deliver cleaner, greener and more sustainable transport via walking and cycling routes.
An attractive and vibrant place for business investment and sustainable growth	The quality of place is an important influence on inward investment. A healthy and biodiverse natural environment provides many ecosystem services that are essential to sustainable growth e.g. carbon storage and capture, pollination and space for relaxation, recreation and sustainable transport.
A council which empowers and cares about people	How?
A focus on tackling inequalities and improving outcomes	Access to good quality green space in deprived areas has been shown to reduce health inequalities. Evidence shows that living in a greener environment can promote and protect good health, and aid in recovery from illness and help with managing poor health. Greener environments are also associated with better mental health and wellbeing outcomes including reduced levels of depression, anxiety, and fatigue, and enhanced quality of life for both children and adults.
An open and enabling organisation	How?
Engage with and empower our communities	GI provides space for education, connection with nature, green travel, recreation and community cohesion through providing a focal point for activities such as community events, volunteering and informal meeting places.
Manage our resources and invest wisely	Investment in nature based solutions and GI has potential to save on capital and revenue costs, whilst simultaneously providing multiple benefits/ecosystem services.

4.2 Existing Local Plan

Local planning policy documents prepared by the council comprise the Local Plan which sets out the main policies, and Supplementary Planning Documents (SPDs), which add further detail. The Local Plan currently comprises a number of separate documents which include:

- The North Somerset Core Strategy (2017)
- The Site Allocations Plan (2018)
- The Development Management Policies (2016)

Along with Neighbourhood Plans prepared by parish or town councils, the Local Plan forms part of the Development Plan. Section 38(6) of the Planning and Compulsory Purchase Act stipulates that planning applications must be determined in accordance with the Development Plan unless material considerations indicate otherwise. This gives considerable weight to the documents that comprise it. Supplementary Planning Documents (SPDs) are not part of the Development Plan but carry weight as a material consideration in determining planning applications.

Relevant policies and SPDs from the Council's Local Plan are set out below.

4.2.1 NSC Core Strategy (January 2017)

The Core Strategy sets out the broad long-term vision, objectives and strategic planning policies for North Somerset up to 2026. It focuses on place shaping, creating sustainable communities, health, education and wellbeing.

The role of the Core Strategy and other planning policy documents is to provide the spatial, land-use expression of the shared priorities set out in the Sustainable Community Strategy. In order to create a clear policy framework, the Core Strategy identifies a suite of spatial visions and priority objectives.

Spatial and Area policies are set out which provide the framework for delivering the visions and objectives. Relevant spatial policies include:

CS1: Addressing climate change and carbon reduction

- Includes maximising the use of sustainable transport solutions including walking and cycling, multifunctional green infrastructure, protecting and enhancing biodiversity, opportunities for local food production, resilience to the impacts of climate change e.g. flooding, shading.

CS2: Delivering sustainable design and construction

- Includes reference to Sustainable Drainage Systems

CS3: Environmental impacts and flood risk assessment

- Includes air, water or other environmental pollution or harm to amenity, health or safety and development in zones 2 and 3 of the Environment Agency Flood Map

CS4: Nature conservation

- Includes meeting local and national biodiversity action plan (BAP) targets; maximising benefits to biodiversity and avoiding net loss of biodiversity; protecting connecting and enhancing important habitats; provision and enhancement of green infrastructure; and native tree planting and retention of trees.

CS5: Landscape and the historic environment

- Includes National Character Areas, Landscape Character Assessment and Mendip Hills AONB and heritage assets.

CS6: North Somerset's Green Belt

- Within North Somerset the boundaries of the Bristol – Bath Green Belt will remain unchanged during the plan period.

CS9: Green infrastructure

- Includes Protection and enhancement of GI (existing and new provision), ensuring it is multifunctional and accessible. Priority given to formal parks and gardens; protection and planting of trees and woodlands in urban areas; the promotion of the north slopes of the Mendip Hills AONB as sub-regional corridors for biodiversity, recreation and landscape retention; the promotion of the Congresbury Yeo, River Banwell, North Somerset Levels and Moors, and Grumblepill Rhyne as local corridors for biodiversity and landscape enhancement; the protection and enhancement of biodiversity; the connection of disjointed woodlands, particularly ancient and semi-natural woodland, such as those around the Wraxall/Failand ridge; the continued development of a network of green spaces, water bodies, paths and cycleways and bridleways in and around the urban areas, recognising the value of sustainable drainage systems for green infrastructure; the management, maintenance, upgrading and extension of the public rights of way network including improved connectivity to areas of green infrastructure within and outside North Somerset; the provision of strategically significant green spaces in association with all areas of development.

CS10: Transportation and movement

- Includes enhancing facilities for pedestrians, including those with reduced mobility, and other users such as cyclists and reducing the adverse environmental impacts of transport and contribute towards carbon reduction.

CS12: Achieving high quality design and place-making

- High quality architecture and urban design will be sought from development demonstrating a robust design process to generate solutions that have clearly considered the existing context, and contribute to social, economic and environmental sustainability

CS14: Distribution of new housing

CS26: Supporting healthy living and the provision of health care facilities

- Includes encouraging development that promotes active living through creating places that are easily accessible, attractive and safe to move around by walking or cycling; Promoting healthy lifestyles by addressing existing deficiencies in provision, and aiming to improve the quality and quantity of sports facilities, playing pitches and children's play spaces throughout the district and access to them; and encouraging development which incorporates, or is within walking distance, from attractive, usable green public open space and contributes to enhancing the green infrastructure network.

CS27: Sport, recreation and community facilities

Where the local provision of sport, recreation, children's play and other community facilities arising from new residential development are inadequate to meet projected needs and standards, additional provision in safe and accessible locations will be sought to meet any identified shortfall. This provision may be in the form of on site provision or the enhancement/improved access to existing facilities.

Existing facilities will be safeguarded from alternative use unless suitable alternative facilities can be made available or the existing facilities are surplus to requirements.

On large scale developments facilities will be provided in step with population growth and will be designed as an integral part of the development.

4.2.2 NSC Development Management Policies – Sites and Policies Plan Part 1 (July 2016)

The Sites and Policies Plan brings forward the detailed development plan policies which complement the strategic context set out in the Core Strategy.

There are many relevant policies in the plan, the main one being Policy DM19: Green Infrastructure. This policy aims to ensure new development contributes to the safeguarding, improvement and further provision of North Somerset’s green infrastructure and that the provision of multi-functional, inter-connected and adaptable green infrastructure is taken into account in the design and layout of new development proposals. It refers to the Development Contributions: Planning Obligations Supplementary Planning Document SPD (which provides more detailed information on community sport, leisure facilities and GI requirements) and the Biodiversity and Trees SPD, which are considered below.

4.2.3 North Somerset and Mendip Bats Special Area of Conservation (SAC) Guidance on Development SPD (January 2018)

The SPD contains guidance on development regarding impacts on the North Somerset and Mendip Bats Special Area of Conservation (SAC), one of four European sites (sites of international importance for wildlife) in North Somerset. It was designated because of its importance for Greater and Lesser Horseshoe Bats.

The SAC itself comprises component SSSIs which in North Somerset include, for example, the two maternity roosts at the Brockley Hall Stables SSSI and King’s Wood SSSI, and also hibernation roosts like the Banwell Bone Caves and, in Somerset, the maternity and hibernation roosts in the Cheddar Complex SSSI and the hibernation roosts at Wookey Hole SSSI. However, the landscapes around the SAC itself are also important in providing foraging habitat needed to maintain the favourable conservation status of the horseshoe bats. Therefore, the guidance sets out strong requirements for consultation, survey information and appropriate mitigation, to demonstrate that development proposals will not adversely impact on the designated bat populations.

The guidance identifies the Juvenile Sustenance Zones of 1 kilometre (km) around the maternity roosts. New build development on green field sites should be avoided in the Juvenile Sustenance Zones (JSZs) in view of their sensitivity and importance as suitable habitat as foraging areas for young bats, being within 1km of maternity roosts for Greater Horseshoe bats and 600 metres for Lesser Horseshoe bats.

The guidance also identifies the “Bat Consultation Zone” where horseshoe bats may be found, divided into bands A, B and C, reflecting the likely importance of the habitat for the bats and proximity to maternity and other roosts. Within the Consultation Zone development is likely to be subject to particular requirements, depending on the sensitivity of the site. Within bands A or B of the Consultation Zone, proposals with the potential to affect features important to bats should be discussed with the local authority and/or Natural England as necessary. Within band C developers should take advice from their consultant ecologist.

The SPD also sets out the survey and mitigation requirements for proposals within the Bat Consultation Zone.

North Somerset and Mendip Bats SAC Radio Tracking project (2020)

North Somerset Council have commissioned a bat radio tracking project, to gather information relating to horseshoe bat populations in order to complete Habitat Regulations Assessments (HRAs) and to determine impacts on the North Somerset and Mendip Bats SAC.

It will also inform on-site and off-site avoidance, mitigation, compensation and enhancement measures, and the findings will be used to update the current North Somerset and Mendip Bats SAC Guidance SPD, and will be an important factor in decision making in relation to GI.

4.2.4 Development Contributions Supplementary Planning Document (SPD) (January 2016)

This SPD provides more detailed guidance on the principles and operation of development contributions to support Core Strategy Policy CS34: Infrastructure delivery and development contributions.

Section 3 of the SPD sets out the requirement for sports, leisure and community facilities which includes children’s and youth play spaces and playing pitches. The requirements for these are set out below:

Facility	Ratio	Distance Threshold
Multi-Use Games Area (MUGA)	One 35m x 24 MUGA per 5,000 people	10 minutes’ walk
Children’s play	One play area with at least six items of equipment per 2,500 people.	15 minutes’ walk.
Adult football pitches	One pitch per 1,750 people aged 16 – 45	10 minutes’ drive.
Junior football pitches	One pitch per 300 people aged 10 – 15.	10 minutes’ drive
Mini-soccer pitches	One pitch per 200 x 6 – 9 year olds.	10 minutes’ drive
Cricket pitches / artificial wickets	One pitch per 2,600 people aged 11 - 55	15 minutes’ drive.
Rugby pitches	One pitch per 2,000 people aged 6 – 45	20 minutes’ drive.
Hockey pitches	One synthetic turf pitch per 12,000 people aged 16 – 45.	20 minutes’ drive

Strategic provision such as skate parks and golf courses are considered on a case-by-case basis.

Section 8 of the SPD sets out the standards of green infrastructure provision required in North Somerset. The provision of on-site and off-site provision for developments that come forward will be assessed against these standards, taking into account any existing provision in the area. These are as follows:

Type of space	Minimum m2 required per person	Maximum distance (m) straight line from any property
Formal parks and public gardens (urban)	2.5	n/a
Formal parks and public gardens (rural)	1.0	n/a
Community Parks	6.0	600
Neighbourhood Space	Open 6.0	480

Woodland	10.0	n/a
Conservation sites (urban)	7.5	n/a
Conservation sites (rural)	12.0	n/a
Green corridors	Will be assessed at design stage	
Allotments	2.5	1000

The evidence for green infrastructure need and supply was compiled through:

- An extensive survey of the perceptions of North Somerset residents in relation to the parks and open spaces maintained by NSC.
- Parish and town council consultation on the adequacy of provision for green spaces.
- An independent report⁸ on the quality of open space which identified deficiencies for each typology and where there are shortfalls in supply.

The SPD recognises that allowing for the provision of green space within new housing developments is vital in delivering a wider range of benefits to residents and the environment. Developers are encouraged to design residential developments around Parks and Green Spaces, to plan and where possible construct open space provision first, and develop the built environment around this. Developers will also need to consider providing multi-functional spaces that can enable other requirements, such as the provision of sustainable drainage systems, renewable energy sources, and climate change amelioration to be met.

4.2.5 Biodiversity and Trees SPD (December 2005)

This SPD aims to encourage design for biodiversity gain alongside new development, both within the building design and the adjoining open spaces.

It seeks to further the actions of the national, regional and local Biodiversity Action Plans. Action for Nature is the Biodiversity Action Plan for North Somerset.

The habitat action plans in Action for Nature are:

- Woodlands
- boundaries and linear features
- Species-rich grasslands
- Fen, marsh and swamp
- Coastal and floodplain grazing marsh
- Standing open water
- Rivers and Field streams
- Estuary
- Urban
- Traditional orchards

The species action plans in Action for Nature include:

- Otter
- Water vole
- Greater horseshoe bat
- Water shrew

Planning applicants must satisfy the council that development can be successfully reconciled with the interests of the biodiversity as well as the amenity of the trees on the site and its

surroundings. The proposal should be planned so that existing habitats, species and ‘wildlife corridors’ are protected and there is no net loss to the biodiversity resource. In addition, specific works or measures to conserve, protect and / or benefit the species or habitats present, as well as provision for future management, may need to be agreed between developers and the council.

4.2.6 Landscape Character Assessment SPD (September 2018)

The main purpose of this assessment is to document the current status of the North Somerset landscape, furthering the understanding of the landscape resource available in the area and giving an indication of areas in need of enhancement and of conservation.

11 different landscape types (A to L in table adjacent) are identified, which are subdivided into component landscape character areas, as follows:

Chapter 3 of the report provides an overview of ecological characteristics across the area that relate to their underlying physical environment.

Ecological Character is identified within Natural England National Character Area profiles (NCAs). There are four NCAs within North Somerset highlighting the variety of habitat types within the district.

The landscape of North Somerset is highly varied, with open moors and river flood plains contrasting with ridges, gorges and rolling farmland. In the north of the district there are a large number of Registered Parks and Gardens and extensive woodland, which in combination with the varied topography limits visibility. Elsewhere in the district tree cover is concentrated on the slopes of hills and ridges, and long-distance views are available from areas of high topography across the open moors and flood plains.

4.3 North Somerset climate emergency strategy and action plan

The Council’s Climate Emergency Strategy is a live document which outlines seven key principles for how they will address the causes and consequences of climate change, with the aim to be a carbon neutral council and a carbon neutral area by 2030. The Strategy links in with the Corporate Plan, the Medium Term Financial Plan, and other strategic plans including the Economic Plan and the Joint Local Transport Plan.

The seven key principles are:

- Become a net zero carbon council;
- An energy efficient built environment;
- Renewable energy generation;
- Repair, reuse, reduce and recycle;
- Replenish our carbon stores;
- Reduce emissions from transport;
- Adapting to climate change.

The Action Plan is aligned to these seven principles, and the achievement of actions is measured on a Data Dashboard.

While reducing carbon from fossil fuels is the Council’s priority for tackling the climate emergency, it is also necessary to find ways to increase carbon absorption or sequestration by the natural environment, by for example tree planting, peatland restoration, different methods of land management and improved agricultural practices that enable carbon to be drawn down into the soil on a large scale, of which this GI Strategy will facilitate.

A Nature emergency has since been declared and these two issues are now combined to ‘tackle the climate and nature emergencies’. This extends the Council’s focus to:

- Recognise the ongoing consultation regarding the new local plan, but one of the aims of the local plan should be to achieve a biodiversity net gain
- Use existing planning policy and development management to ensure biodiversity is improved, environments enriched, and the destruction of habitats is resisted when development occurs. This could be achieved through development of a new Supplementary Planning Document (SPD)
- Seek to work actively with partners locally in North Somerset, regionally in the West of England and beyond to drive collaborative action to improve biodiversity
- Identify areas within North Somerset which could be suitable for habitat restoration and seek to restore them through the council’s emerging Green Infrastructure Strategy, due in 2021
- Seek opportunities to promote local produce and reduce the intensity of agriculture of North Somerset through engagement with businesses and farmers
- Encourage residents, businesses and landowners to reduce pesticide use, and seek to become a pesticide-free council
- Continue to collaborate with our communities, businesses and other organisations such as schools and colleges to improve ecological knowledge and understanding and to encourage more sensitive land management.

4.4 Rights of Way Improvement Plan (2007-2017)

The North Somerset Rights of Way Improvement Plan aims to improve the rights of way network to meet the needs of the identified users. It will help guide development to safeguard and improve the network and align with other strategies and funding bids.

The strategy identifies that a range of users access the rights of way across North Somerset, these include walkers, cyclists, equestrians, drivers of motor vehicles on unsealed roads and people with a range of impairments. All these have needs which the rights of way network need to satisfy. Currently, most of the network can only be used by people on foot or people dependent on mobility vehicles. For cyclists and horse riders the network is small and fragmented leaving them to use lanes or roads. There is also limited provision of routes that can be used by the public with mobility and other impairments.

Through consultation and research, the plan has identified the following shortfalls within the current network:

Table 6 - Shortfalls identified within the North Somerset ROWIP

User	Shortfalls
Casual walkers	<ul style="list-style-type: none"> ● Need to reduce obstructions, improve signage and surfacing to increase ease of use. ● More publicity/promotion/way marking.

Walkers with dogs	<ul style="list-style-type: none"> • Greater education about responsible behavior and risk to livestock. • Need for dog friendly routes/areas • Need for routes with suitable facilities
Ramblers	<ul style="list-style-type: none"> • Need to increase ease of use. • More publicity/promotion.
Cyclists	<ul style="list-style-type: none"> • Lack of rights of way for cyclists and small amount of permissive routes. • Poor connectivity • Inadequate information
Multi-user routes (walkers and cyclists)	<ul style="list-style-type: none"> • Does the network have sufficient links between trip generators – home, schools, shops, places of work?
Horse riders	<ul style="list-style-type: none"> • A small percentage of rights of way are available for horse riders, and very little permissive. • Poor connectivity. • Inadequate information.
Carriage drives	<ul style="list-style-type: none"> • Small length of routes publicly available. • Poorly connected
Off-road motorists	<ul style="list-style-type: none"> • No provision.
Mobility, visually and other impaired users	<ul style="list-style-type: none"> • Limited percentage of network available. • Insufficient targeted information provided.
Non-users	<ul style="list-style-type: none"> • Insufficient targeted information provided.

To target these shortfalls, the plan identifies four action plan areas these are:

1. Vision and culture – having the right approach.
2. Working practices and processes – having the right tools
3. Services and facilities – doing the right thing.
4. Communication and education – publishing the right information.

This Rights of Way Improvement Plan is currently being rewritten. The Council’s aim is to identify a new approach to managing the local rights of way network – with the aim of better providing what people want rather than only focusing on satisfying statutory duties. NSC will produce a 10 year plan which will look to addressing current restrictions on the 860 km of network such as installing furniture which is less restrictive where possible, identifying routes which could be improved and identifying missing links in the network.

As part of the revision of the plan, consultation with Parish Councils asking for routes which are important to them has been undertaken in the hope that routes which are missing from the network or could be upgraded to allow greater use by all have been identified. Such improvements could be:

- Over the next ten years to seek to remove all stiles, subject to landowner agreement, from the network.
- To ensure, subject to landowner agreement, that all fitted furniture meets the needs of all users.
- Identify missing links in the network, seek landowner acceptance and implement establishment.

- Consider upgrading routes which are currently footpaths to a minimum status of bridleway for the use of Horse riders and cyclist

Nominations which have been submitted by Parish Councils which are considered suitable will be identified within the revised plan and this will assist applications when resources are sought.

4.5 North Somerset's Economic Plan

The Economic Plan sets out 16 commitments we are making to our businesses and residents to help residents experiencing exacerbated deprivation due to the impact of the pandemic. Job losses, business closures, reduced access to digital learning or reskilling courses must be addressed to lessen the impact felt by our vulnerable communities.

It also aims to respond to the changes we've all had to make to the way we live and work and the opportunities that has created. Economic and financial values will remain a core priority in our recovery, but the lockdown has also highlighted a different set of values. Community, connectivity and wellbeing, as well as a healthy and sustainable environment, are now much more prominent drivers for decision-makers.

In response, the Council is prioritising economic renewal activity around three key pillars:

- Providing inclusive growth and wellbeing for North Somerset people.
- Delivering digital access for all.
- Supporting green business and low carbon activities

The 16 commitments are:

- Full fibre and 5G: Ensure next-generation digital connectivity and telecommunications technology is supplied into premises, workplaces and homes.
- North Somerset Local Plan: Develop evidence led economic input into the new Local Plan to deliver mixed and sustainable communities with new homes, jobs and infrastructure.
- Town centre transformation: Encourage our town centres to become thriving places to live, work and enjoy.
- Tech adoption: Ensure businesses can adopt digital technology and maximise the benefits.
- Mobility as a service: Develop wider access to on-demand transport, mobility services and carbon-efficient local delivery solutions.
- Low carbon inward investment: Grow North Somerset's green economy by working in partnership with regional inward investment organisations and working with residents to access skills to support the sector.
- Infrastructure for local working: Provide digital infrastructure and facilities for local working so that our places can realise the maximum opportunities of distributed and flexible working.
- Retrofitting buildings, community energy, renewable energy and carbon reduction: Maximise benefits of energy efficiency schemes by ensuring local people have the right skills to make the most of the job opportunities.
- Employment and skills strategy: Focused activity around opportunities for those who have lost their jobs and are disenfranchised from the labour market, combined with the provision of opportunities to reskill, upskill and deliver access to further and higher education.
- Strategic employment sites: Protect jobs and deliver sustainable activity which retains positive outcomes within the economy and benefits local employment, businesses and communities.

- Visitor economy action plan: Deliver a plan which prioritises the promotion and growth of environmentally friendly holidays, and targeted support to improve the quality and diversity of our visitor economy.
- Creative industries action plan: Deliver a plan which prioritises sustainability throughout the supply chain, makes the case for investment and nurtures talent.
- Enhanced business support programme: Commission a universal prestart, early growth and business resilience service and support Small and Medium Sizes Enterprises to develop inclusive practices into their business models, such as employee ownership.
- Voluntary, community and social enterprise: Work with the sector to help them demonstrate the positive impact they have on the economy and jointly make the case for increased investment.
- J21 enterprise area: Directly invest and seek investment to help the creation of jobs.
- West of England working: Prioritise regional partnerships to ensure maximum impact across the West of England to grow businesses, protect and create jobs

This GI Strategy is relevant to many of these commitments by supporting the foundations of business by helping to make the area a more attractive place to invest in.

4.6 Placemaking Strategy for Weston-super-Mare

The strategy sets out a 10 year vision and ambitions for the town with a concrete plan to help Weston become a healthier, greener and more prosperous place to live, work and enjoy.

The Placemaking Strategy helped to attract a £1.7m Government grant, which will fund Weston General Stores, a project focusing on re-purposing vacant retail space in the town centre. This will create space for people to work in the town centre, particularly if they no longer need to commute into an office.

4.7 NSC Strategic Flood Risk Assessment

The North Somerset Strategic Flood Risk Assessment (SFRA) outlines the approach to identifying suitable development sites that are at a lower risk of flooding by applying the sequential and exception tests. By using the SFRA to consider flood risk in relationship to the type of development good design can be promoted. **The Local Flood Risk Management Strategy (LFRMS)** is a further key document identifying the vulnerable locations to flooding and providing both policy and action plans.

5.0 Health and Deprivation Context

5.1 Public Health England

Public Health England have published the 2019 Health Profile for North Somerset⁹.

In summary, the health of people in North Somerset is varied compared with the England average. About 12.6% (4,625) children live in low income families. Life expectancy for women is higher than the England average. Life expectancy is 9.7 years lower for men and 9.6 years lower for women in the most deprived areas of North Somerset than in the least deprived areas.

5.2 Indices of Multiple Deprivation

The Indices of Deprivation 2019 provide a set of relative measures of deprivation for small areas (Lower-layer Super Output Areas) across England, based on seven different domains of deprivation:

- Income Deprivation
- Employment Deprivation
- Education, Skills and Training Deprivation
- Health Deprivation and Disability
- Crime
- Barriers to Housing and Services
- Living Environment Deprivation

The Index of Multiple Deprivation (IMD) combines information from the seven domains to produce an overall relative measure of deprivation.

Figure 10 below shows the IMD deciles for each LSOA within the Study Area, where 1 is most deprived and 10 is least deprived.

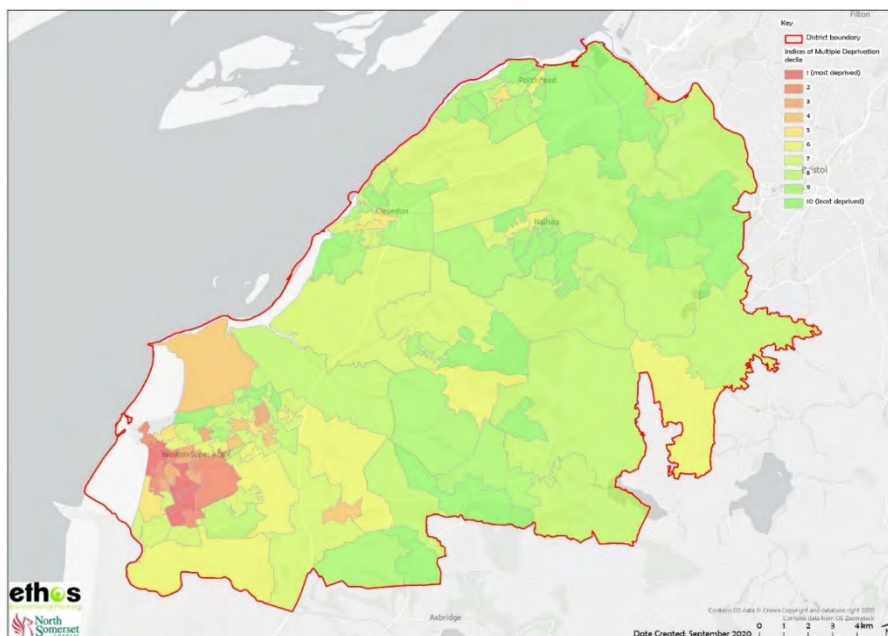


Figure 10 - IMD in North Somerset

As can be seen, the levels of deprivation within North Somerset are generally low. However, relatively large parts of Weston-super-Mare have high levels of deprivation.

Improving access to quality green space has the potential to improve health outcomes for the whole population. However, this is particularly true for disadvantaged communities, who appear to accrue an even greater health benefit from living in a greener environment. This means that green space also can be an important tool in the ambition to increase healthy life expectancy and narrow the gap between the life chances of the richest and poorest in society¹⁰.

APPENDIX 3: GI DATASETS AND MAPS BY THEME

This appendix sets out the GIS datasets that have been used to map strategic GI within North Somerset (July 2020), and also provides maps showing the breakdown of GI by each of the following themes:

- Water/Blue GI
- Biodiversity and Habitats
- Open Space and Access Routes
- Food growing
- Heritage and Landscape.

Table 7 below provides a list of all the GIS datasets used by theme, and how each theme links to the Strategy Objectives (i.e. the West of England Joint Green Infrastructure Strategy (WoE JGIS) outcomes).

Table 7 - GIS datasets used in the mapping of strategic GI, by theme and linked to WoE JGIS

Theme	Datasets	Data Owner	Data Format	Link to Objectives/WoE JGIS outcomes
Water/Blue GI	Nature Recovery Network (NRN) Wetland	WENP	Shapefile	Sustainable water management
	Groundwater Status	WFD	Hosted Feature Service	
	Operational Sub-Catchments	WFD	Hosted Feature Service	Greater resilience to climate change
	Hydrological Subcatchments	WFD	Hosted Feature Service	
	Potential Barriers to Fish Migration	WFD	Shapefile	
	WWNP Floodplain Reconnection Potential	EA	Hosted Feature Service	Improved and better-connected ecological networks
	WWNP Riparian Woodland Potential	EA	Hosted Feature Service	
	WWNP Floodplain Woodland Potential	EA	Hosted Feature Service	Build a resilient economy
	Flood Zones 2 and 3	EA	Hosted Feature Service	
	Runoff Attenuation Features	EA	Hosted Feature Service	
	Flood Defences	EA	Hosted Feature Service	
	Flood Storage Areas	EA	Hosted Feature Service	
	1 in 30 Year Flood Extent	EA	Hosted Feature Service	
	Source Protection Zones	EA	Hosted Feature Service	
	Surface Water	Ordnance	Geopackage (Zoomstack)	
Main and Minor Waterways	Survey			

Theme	Datasets	Data Owner	Data Format	Link to Objectives/WoE JGIS outcomes
		Ordnance Survey	Geodatabase (OS Open Rivers)	
Open Space and Access Routes	National Cycle Network CRoW - Section 4 Conclusive Registered Common Land Open Greenspace Local Nature Reserves (England) National Nature Reserves National Trust Land - Always Open NRN Greenspace Access Catchments Council Owned Accessible Land Public Rights of Way	Sustrans Natural England Ordnance Survey Natural England Natural England National Trust WENP NS Council NS Council	Shapefile Hosted Feature Service Hosted Feature Service Hosted Feature Service Hosted Feature Service Shapefile Shapefile Shapefile	Health and wellbeing for all Create and maintain sustainable places Build a resilient economy
Food growing areas	Traditional Orchards HAP (provisional) Open Greenspace (Allotments/Community Food Growing) Corine Land Cover Map 2018 (Non-irrigated Arable Land) Higher level Environmental Stewardship Scheme Agreements Agricultural Land Classification Grades - Post 1988	Natural England Ordnance Survey Corine Natural England Natural England	Hosted Feature Service Hosted Feature Service Geodatabase Hosted Feature Service Hosted Feature Service	Support sustainable and local food production Build a resilient economy
Biodiversity and Habitats	NRN Ancient Woodland NRN Woodland Local Wildlife Sites Rewilding Areas National Tree Map B-Lines Ancient Woodlands (England) GCN District Licensing Local Nature Reserves National Nature Reserves	WENP WENP NS Council NS Council Bluesky Buglife Natural England Natural England Natural England Natural England	Shapefile Shapefile Shapefile Shapefile Shapefile Shapefile Hosted Feature Service Hosted Feature Service Hosted Feature Service Hosted Feature Service	Improved and better-connected ecological networks Greater resilience to climate change Create and maintain valued healthy landscape

Theme	Datasets	Data Owner	Data Format	Link to Objectives/WoE JGIS outcomes
	SSSI Special Protection Areas Special Areas of Conservation Habitat Network (Combined) Priority Habitat Inventory Dormouse Records	Natural England Natural England Natural England Natural England Natural England NBN	Hosted Feature Service Hosted Feature Service Hosted Feature Service Hosted Feature Service Hosted Feature Service Shapefile	
Heritage and Landscape	Landscape Character Assessment National Trust Open Data: Land National Character Areas AONB Historic Parks and Gardens Scheduled Monuments Unregistered Parks and Gardens Listed Weirs and Mills Conservation Areas Monuments	NSC National Trust Natural England Natural England Historic England Historic England NS Council NS Council NS Council NS Council	Shapefile Hosted Feature Service Hosted Feature Service Hosted Feature Service Shapefile Shapefile Shapefile Shapefile Shapefile	Create and maintain valued healthy landscape Build a resilient economy

The figures below set out the strategic GI by each theme.

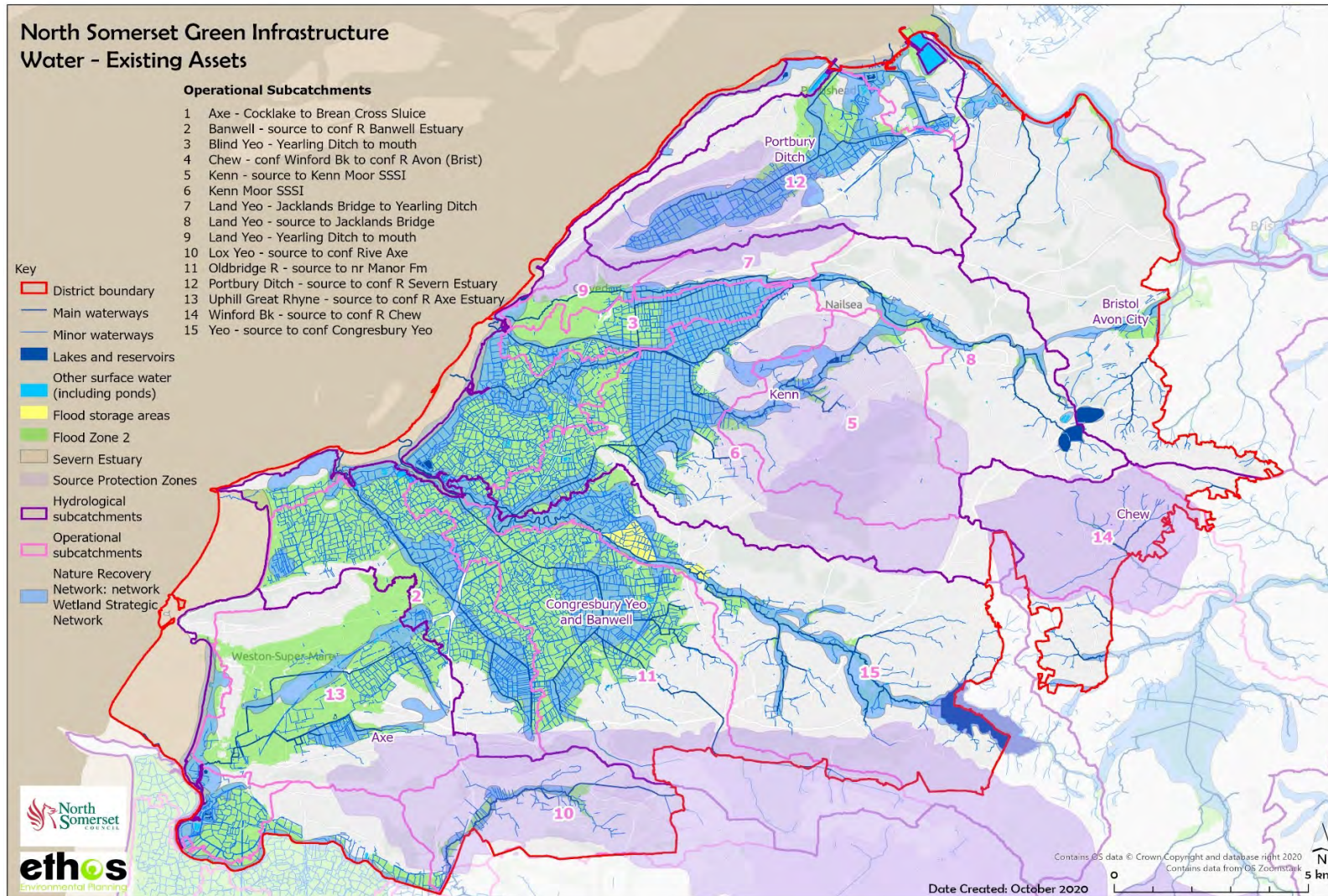


Figure 11 - Mapping of strategic GI by theme: Water

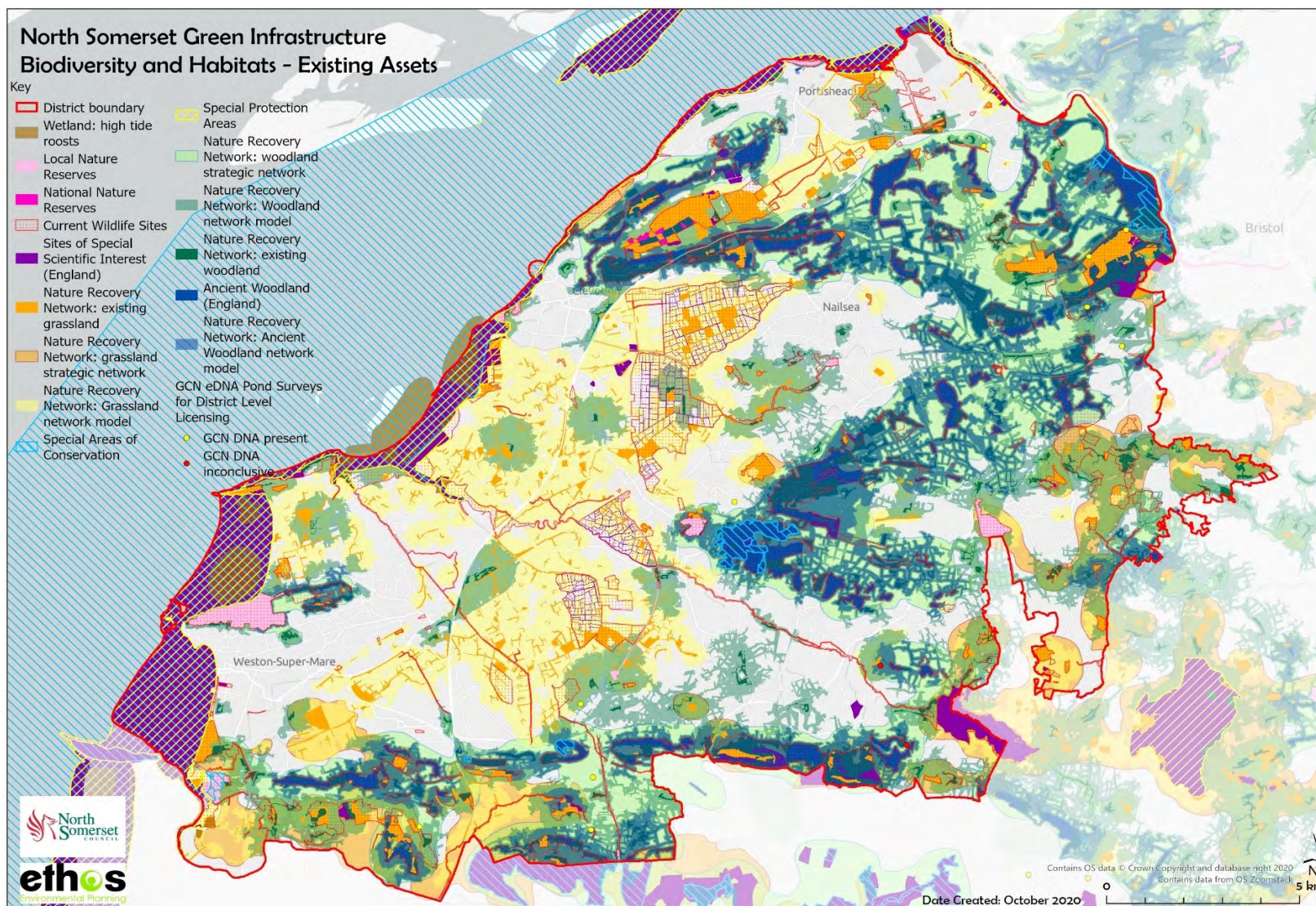


Figure 12 - Mapping of strategic GI by theme: Biodiversity and Habitats 1a (Designated Sites, Nature Recovery Network and GCN eDNA data)

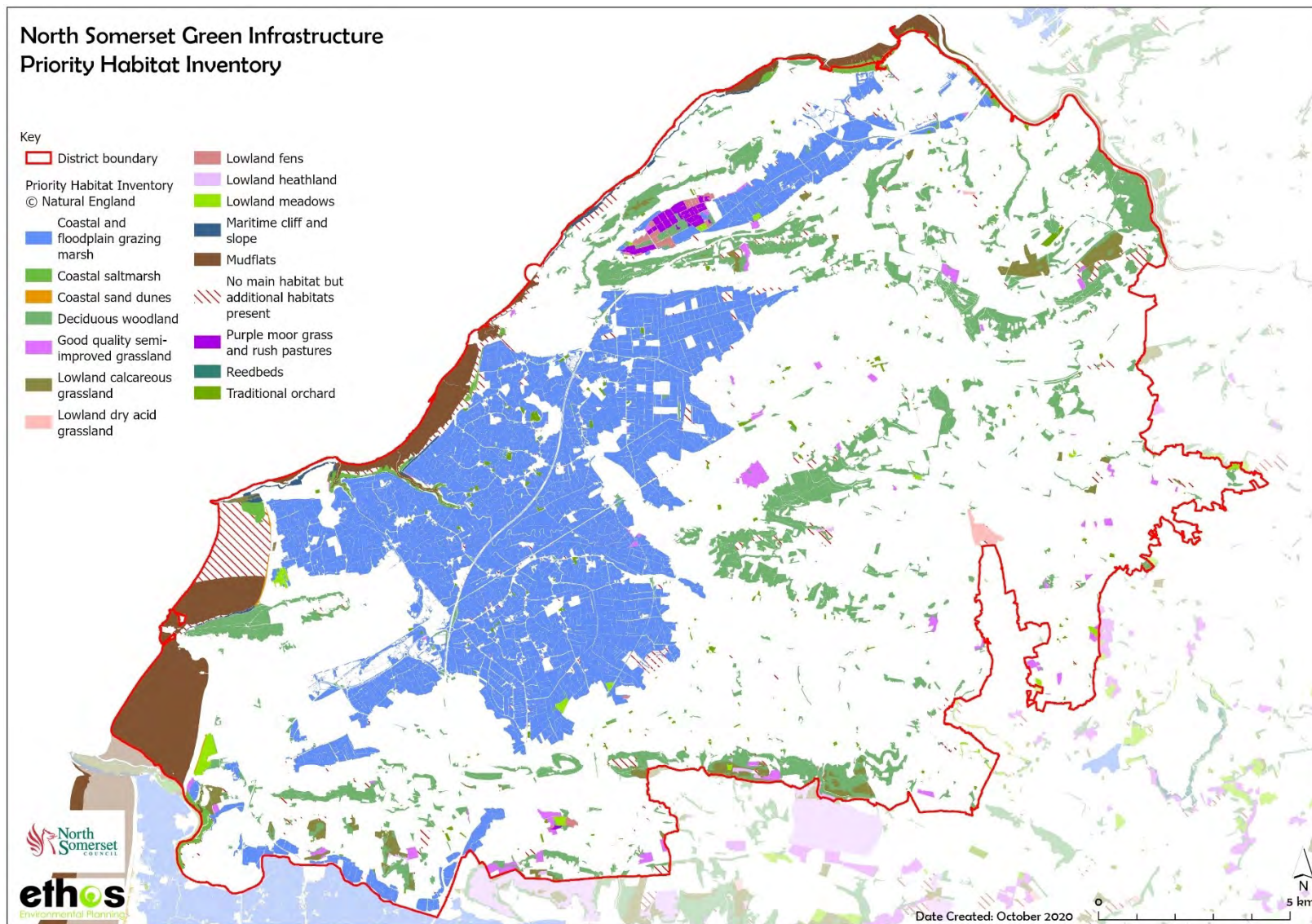


Figure 13 - Mapping of strategic GI by theme: Biodiversity and Habitats (Priority Habitat Inventory)

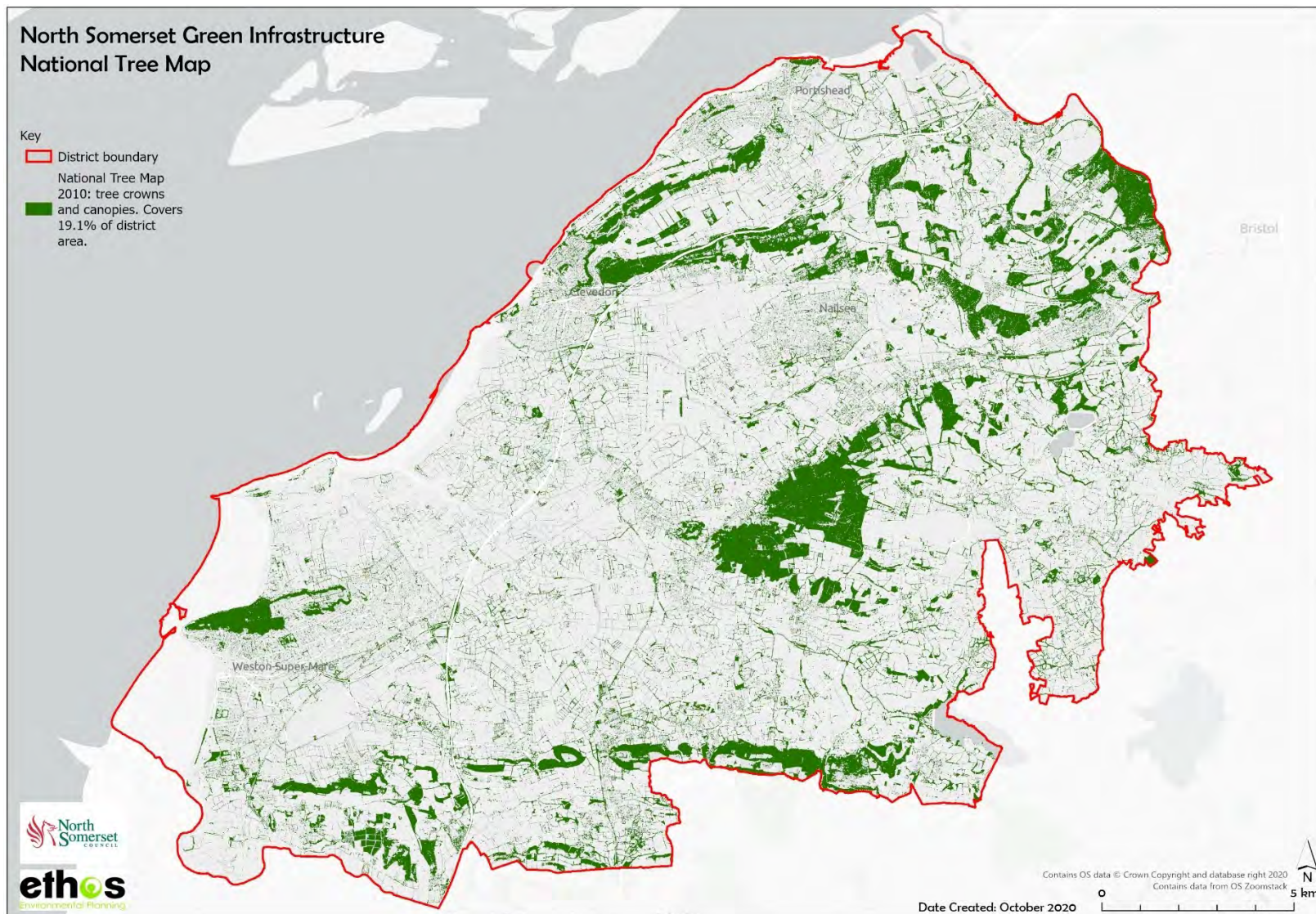


Figure 14 - Mapping of strategic GI by theme: Biodiversity and Habitats (National Tree Map)

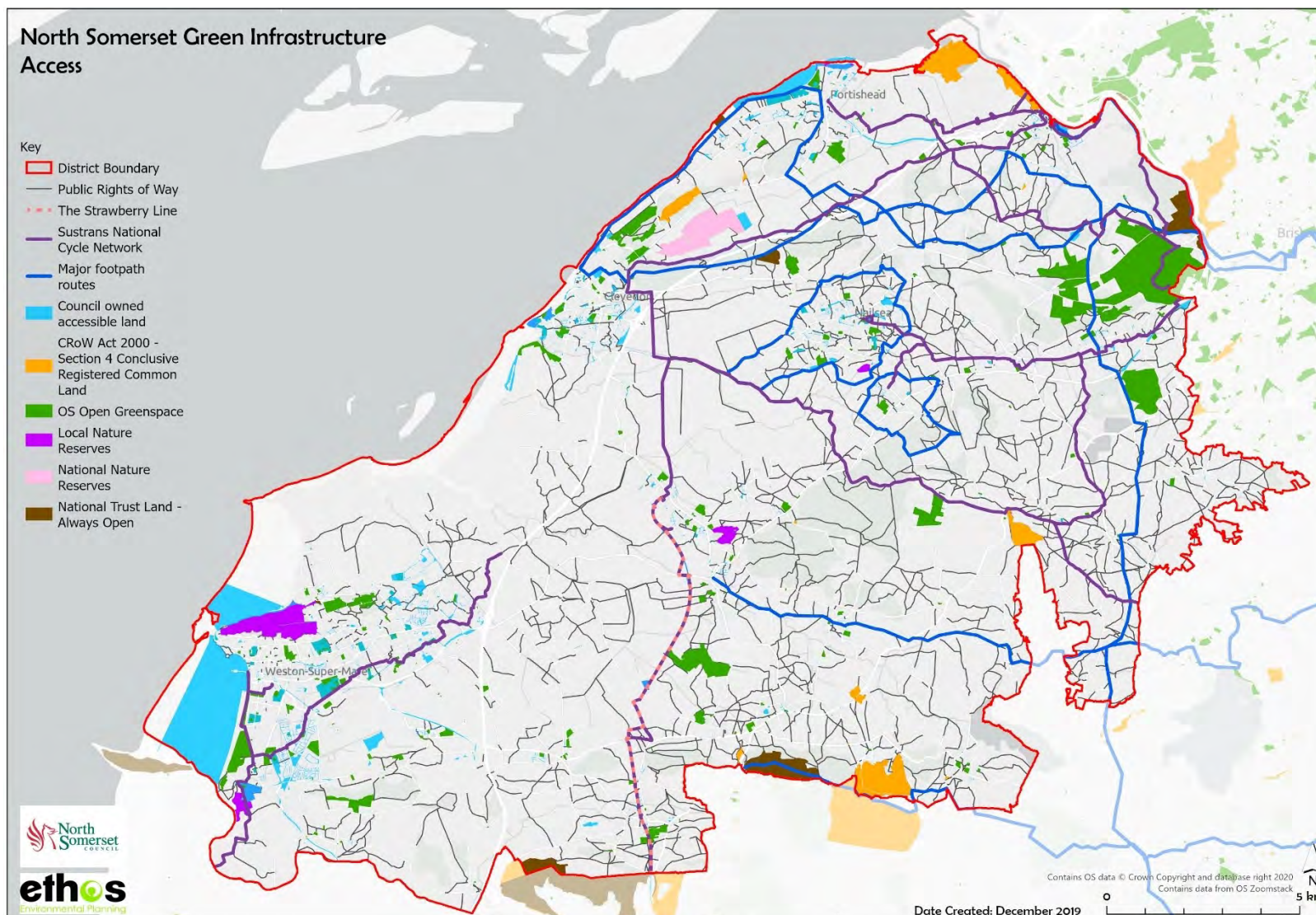


Figure 15 - Mapping of GI network by theme: Accessible Open Space and Access Routes/PROW

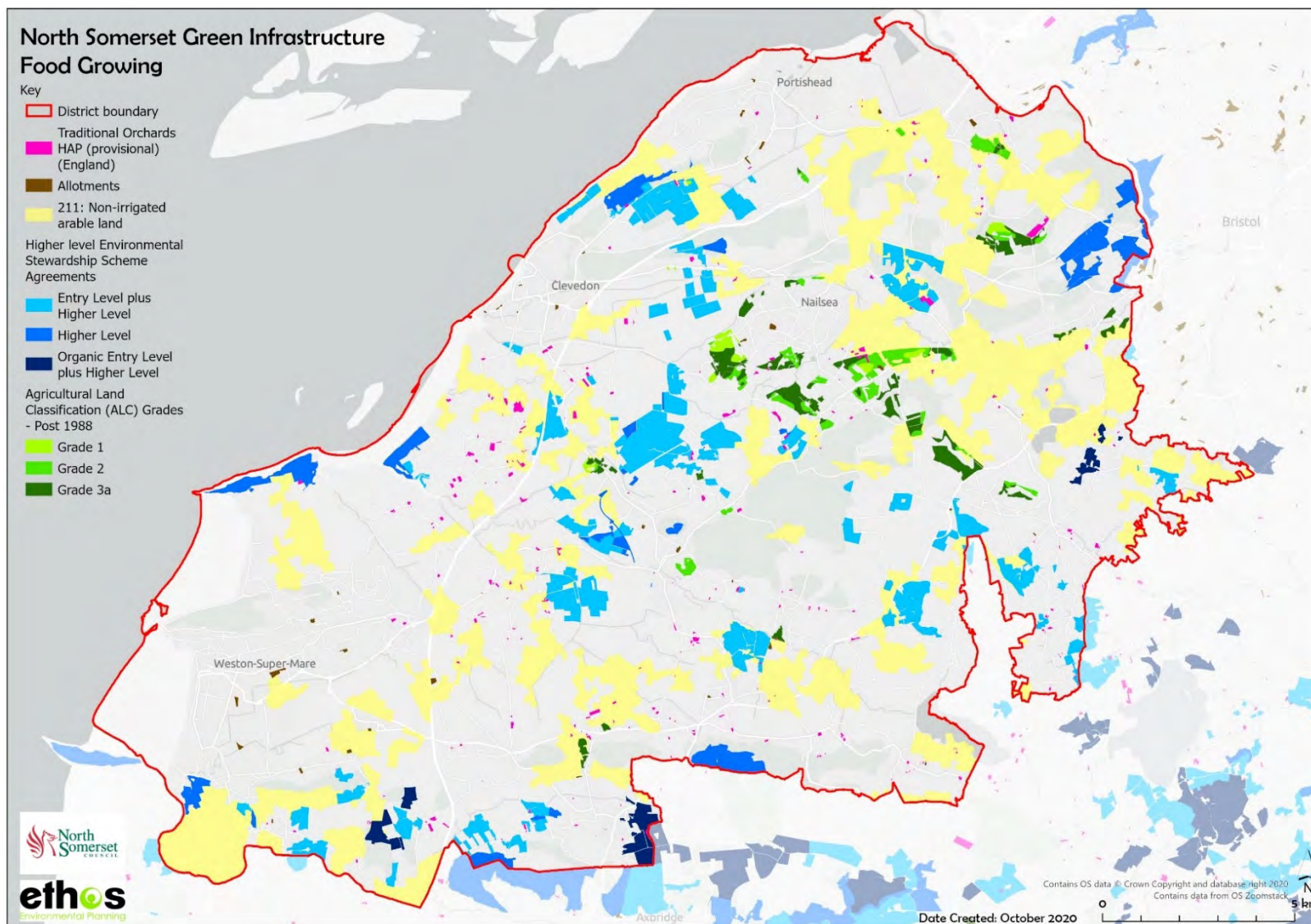


Figure 16 - Mapping of GI network by theme: Food growing

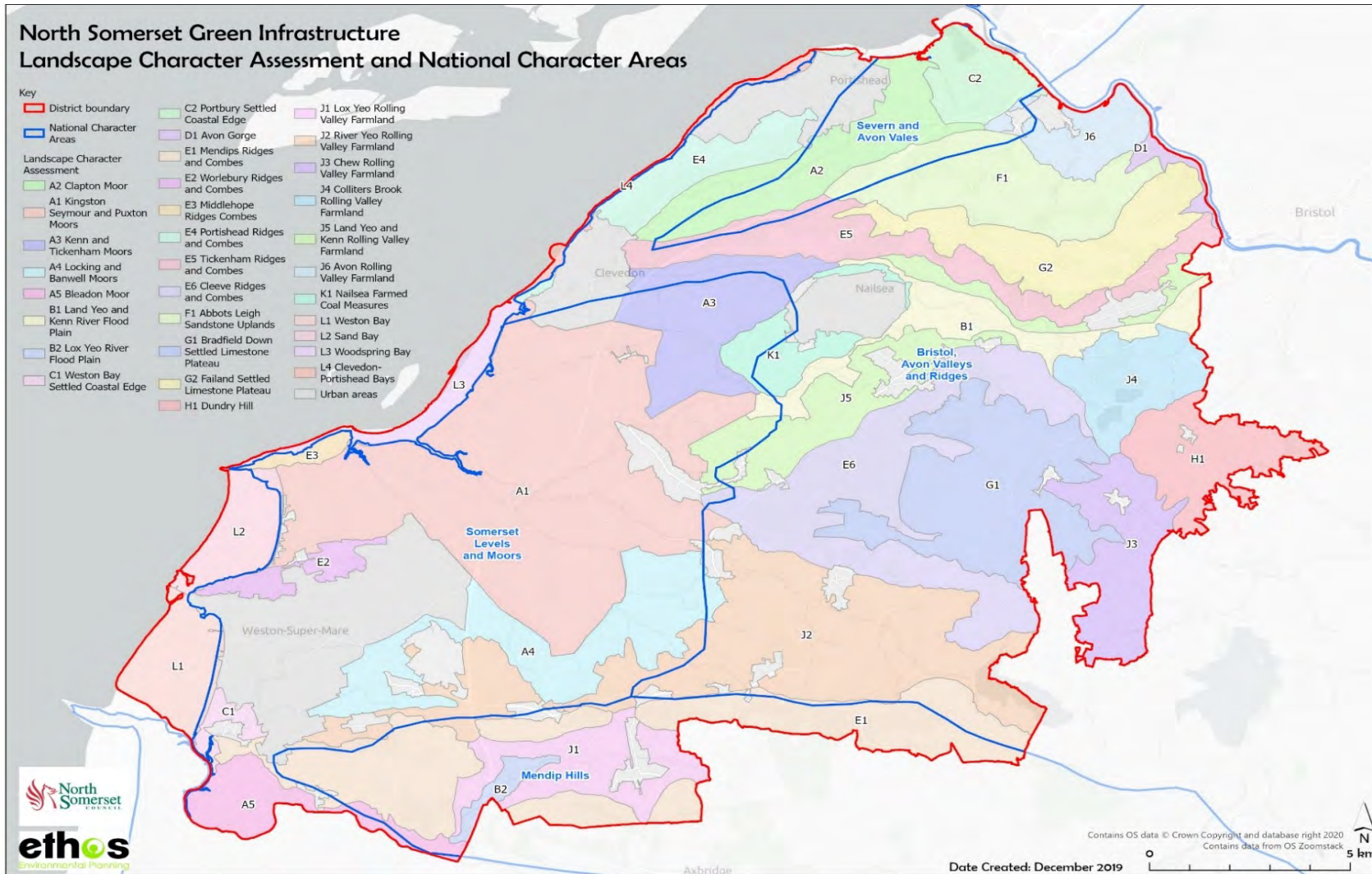


Figure 17 - Mapping of GI network by theme: Heritage and Landscape (LCA and NCAs)

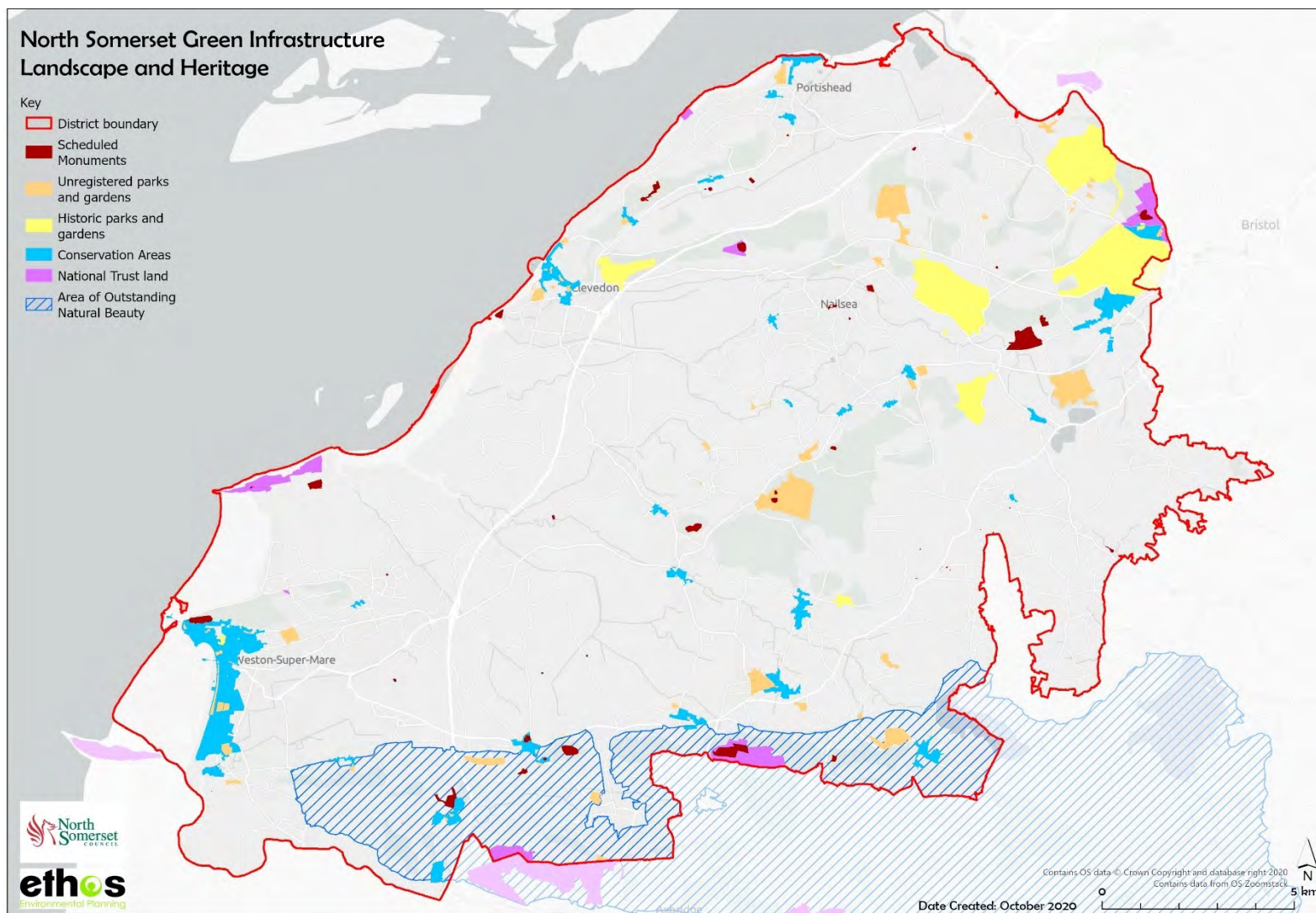


Figure 18 - Mapping of GI network by theme: Heritage and Landscape (Scheduled Monuments, Historic Parks and Gardens, Conservation Areas, National Trust Land and AONB)

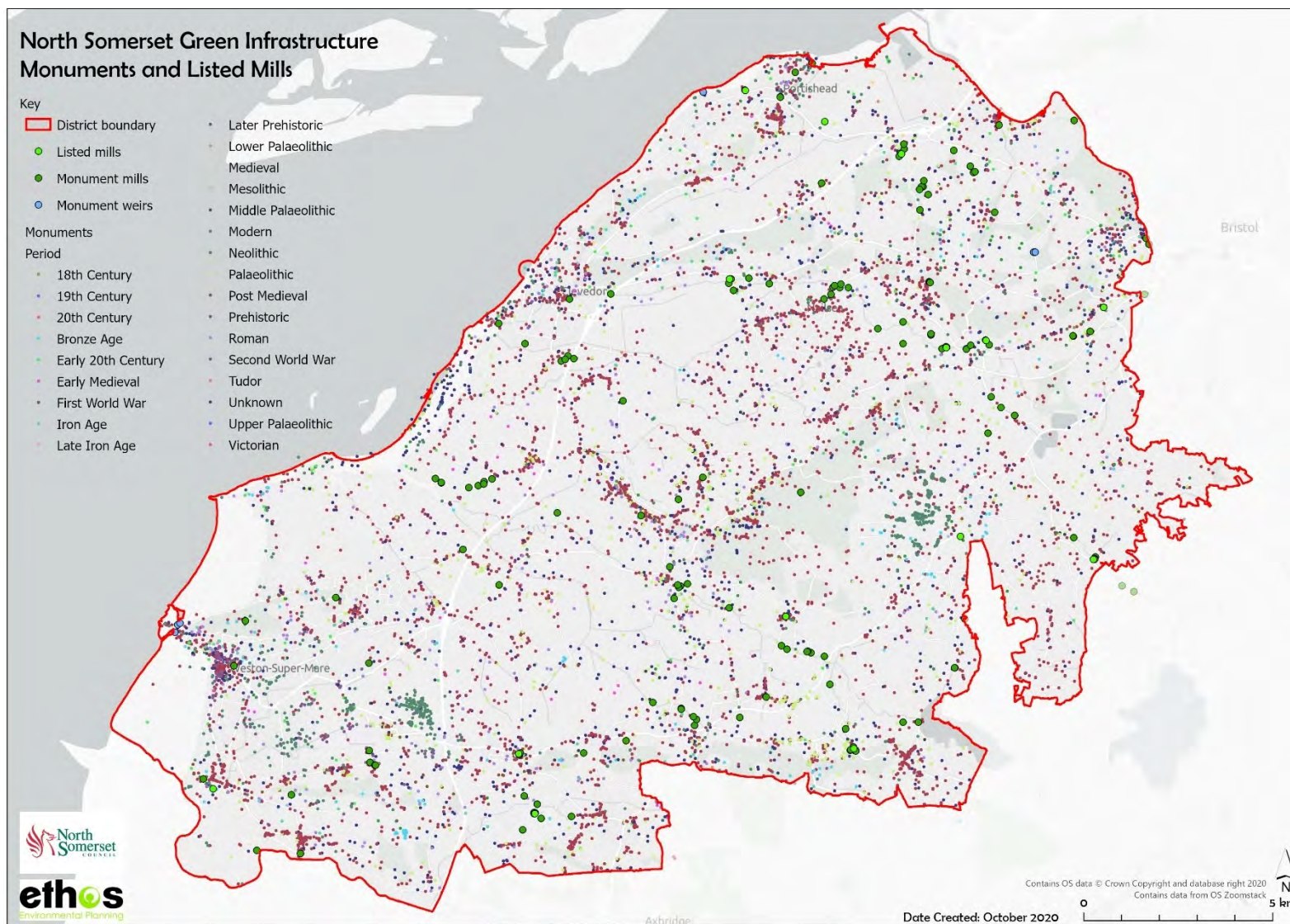


Figure 19 - Mapping of GI network by theme: Heritage and Landscape (Monuments and Mills)

APPENDIX 4: GI OPPORTUNITIES

1.0 Overview

This appendix sets out some specific opportunities for improving the connectivity and quality of GI, identified through the policy and strategy review and consultation with NSC officers. The opportunities set out below provide a starting point for further discussion and development with project partners, and they are not exhaustive. As new projects and opportunities arise, some of which may be not included within this current Strategy, it is the intention of North Somerset Council and its partners to deliver enhanced GI at every opportunity.

The themes covered in this appendix are: water/blue GI, biodiversity and habitats, and open space and access routes.

2.0 Water/Blue GI

Table 8 and Figure 20 below highlight some specific issues and opportunities for improving blue GI, as well as existing projects, drawing on various sources including: existing Bristol Avon Catchment Partnership (BACP) projects, WFD water quality data, the Nature Recovery Network (NRN) and Environment Agency WWNP (Riparian Woodland Potential and Floodplain Woodland Planting Potential) all shown in Figures 21-23.

Table 8 - Opportunities for improving water/Blue GI (also see Figure 20)

Number on map (Figure)	Opportunity
1	Improve Gordano Valley SSSI. 35.30% in favourable condition. (Parts of it have been assessed as being unfavourable (61.18% recovering, 1.61% no change and 1.91% declining)*)
2	Improve Tickenham, Nailsea and Kenn Moors SSSI. (Parts of it have been assessed as being in unfavourable condition (7.91% recovering, 27% no change and 1.21% declining). 68.88% in favourable condition)*)
3	Improve Biddle Street SSSI (Only 16.42% in favourable condition. 55.53% in unfavourable recovering, and 28.04% in unfavourable declining)*)
4	Improve quality of Puxton Moor SSSI. Overall in favourable condition. (Parts have been assessed as being in unfavourable declining condition (6.11%). 93.89% in favourable condition)*)
5	North Somerset Levels and Moors Partnership Project (Ongoing) BACP Project: Working with landowners to improve habitat management for wildlife and to promote soil management to help mitigate flooding, improve water quality and increase habitat for wetland birds.
6	Nailsea Multi-functional Constructed Wetland (Ongoing) BACP Project: A partnership led project to provide detailed design to identify how a multifunctional wetland can be implemented. This will build on work that has previously been delivered in stage 1 of the scoping process.
7	Bristol Water River Congresbury Yeo Project (Ongoing) BACP Project to assess the impacts of the reservoir on the rivers downstream in terms of Water Framework Directive (WFD). Trials of options to mitigate impacts will be delivered.

8	Bristol Water River Congresbury Yeo Project (Ongoing) BACP Project: This project will assess the impacts of the reservoir on the rivers downstream in terms of Water Framework Directive (WFD). Trials of options to mitigate impacts will be delivered.
9	Parts of Severn Estuary SSSI in unfavourable Condition (However, 92.69% in favourable condition).
10	Mendip Lakes Partnership (Ongoing) BACP Project: Working with farmers across the Blagdon and Chew Reservoir catchments to improve water quality and enhance habitats.
11	NSC Summer Lane Ponds Flood Relief Scheme. To reduce the risk of flooding in Locking Castle with improvements to the Summer Lane ponds and surrounding ditches. Funding has come from the Environment Agency, the Regional Flood and Coastal Committee, North Somerset Council and Wessex Water. Delayed due to COVID 19.

*Overlaps with opportunities for improving grassland habitat.

F

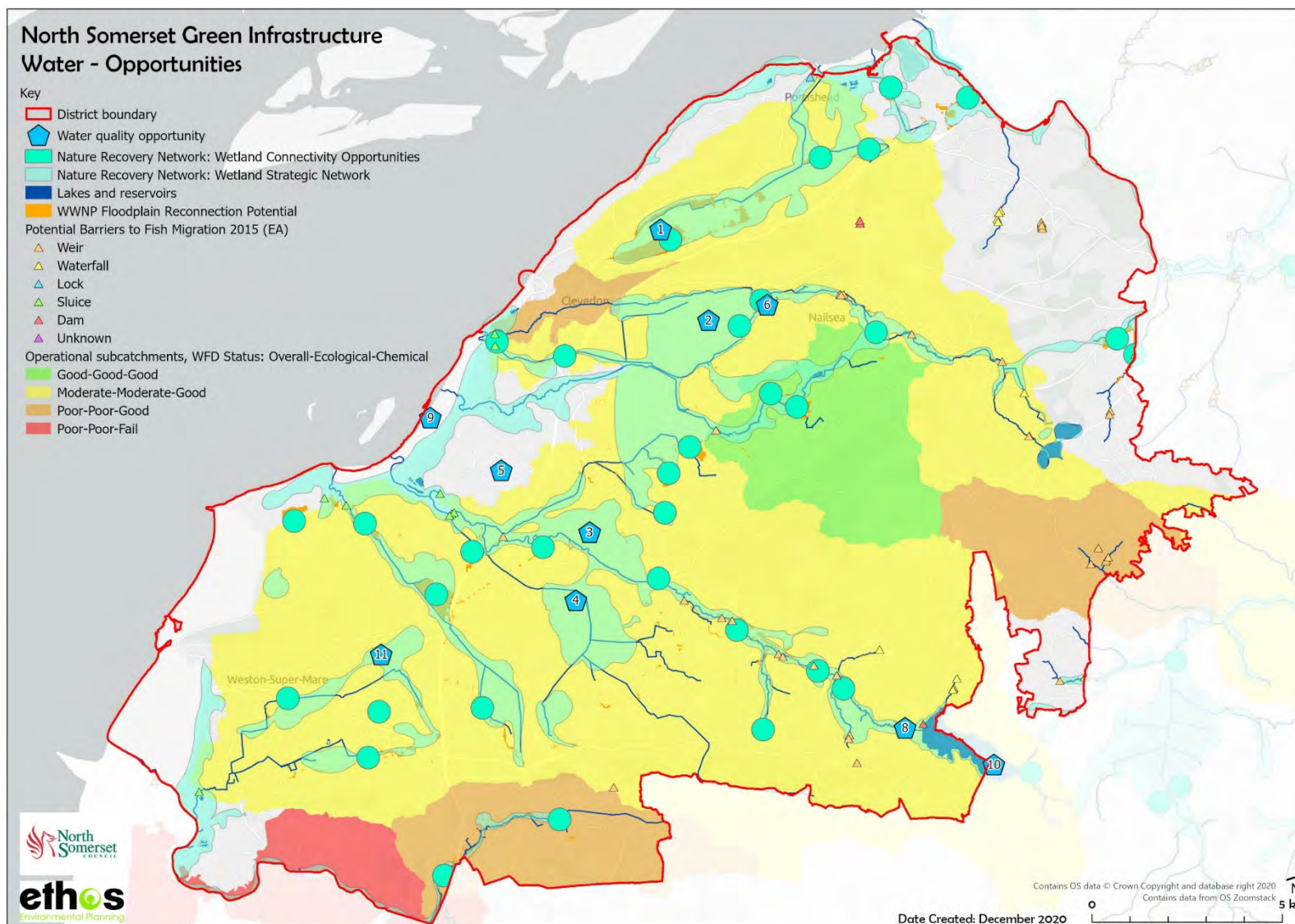


Figure 20 - North Somerset Green Infrastructure Water Opportunities

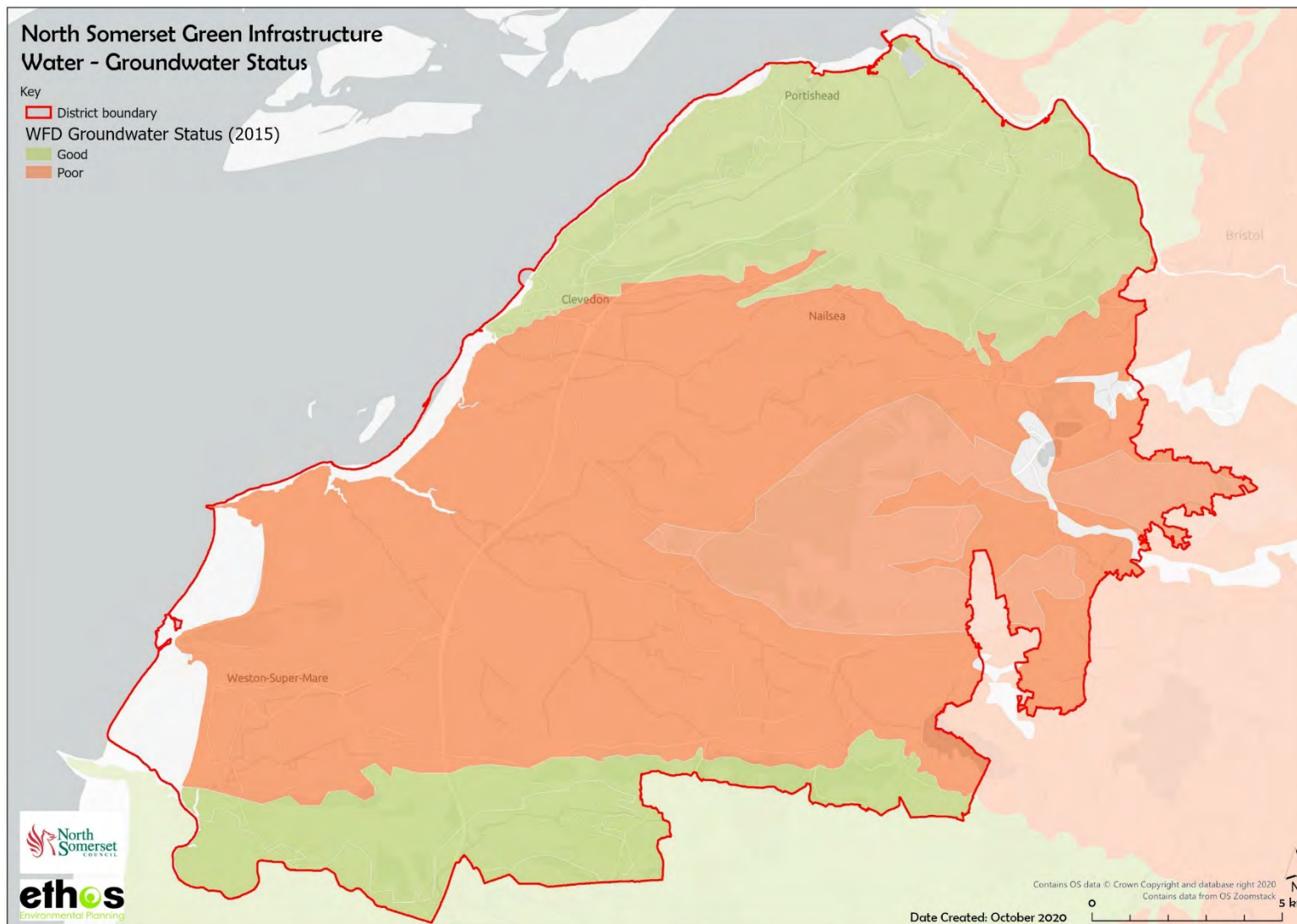


Figure 21 - Groundwater Status

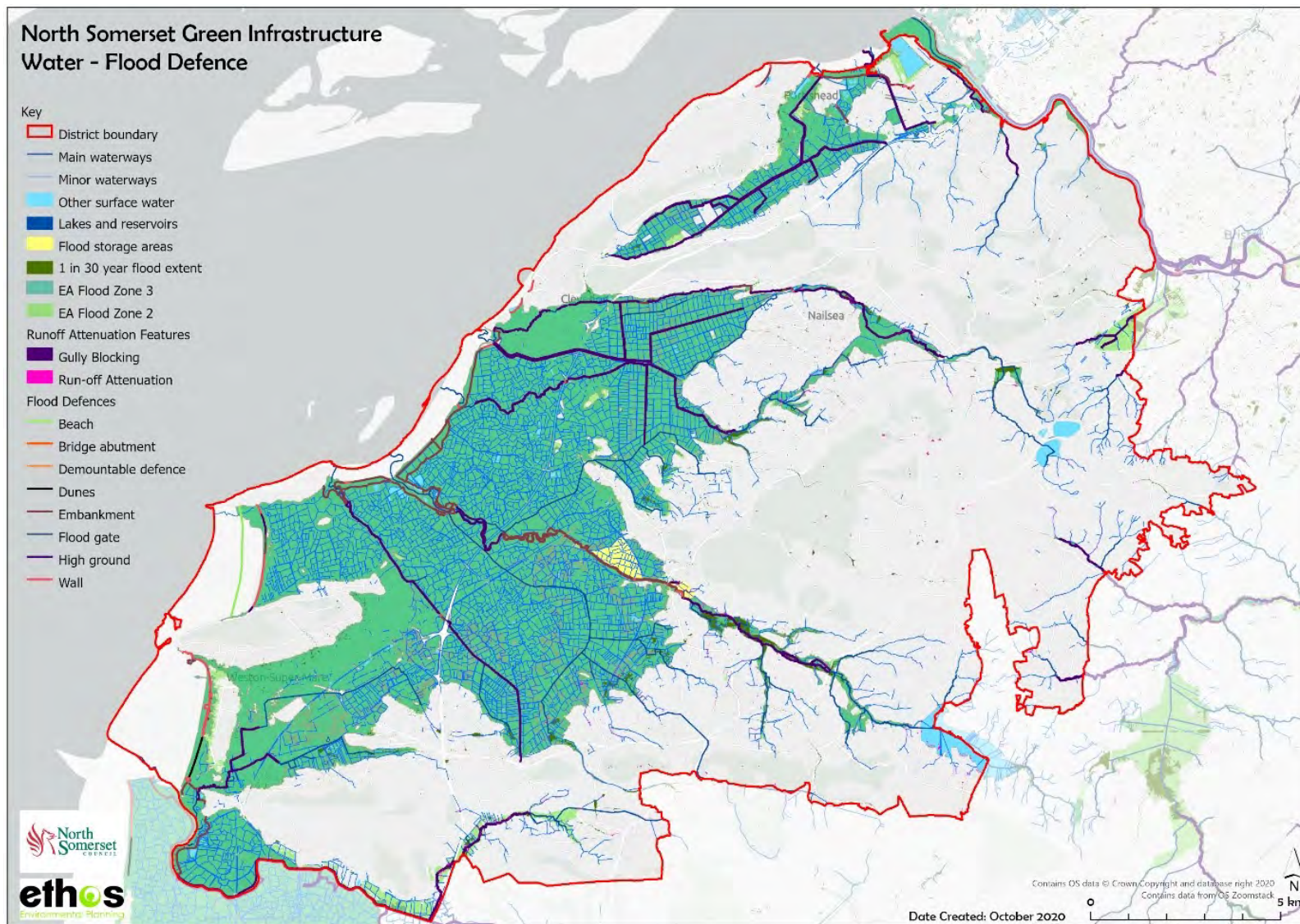


Figure 22 - EA Flood Zone 2 and 3

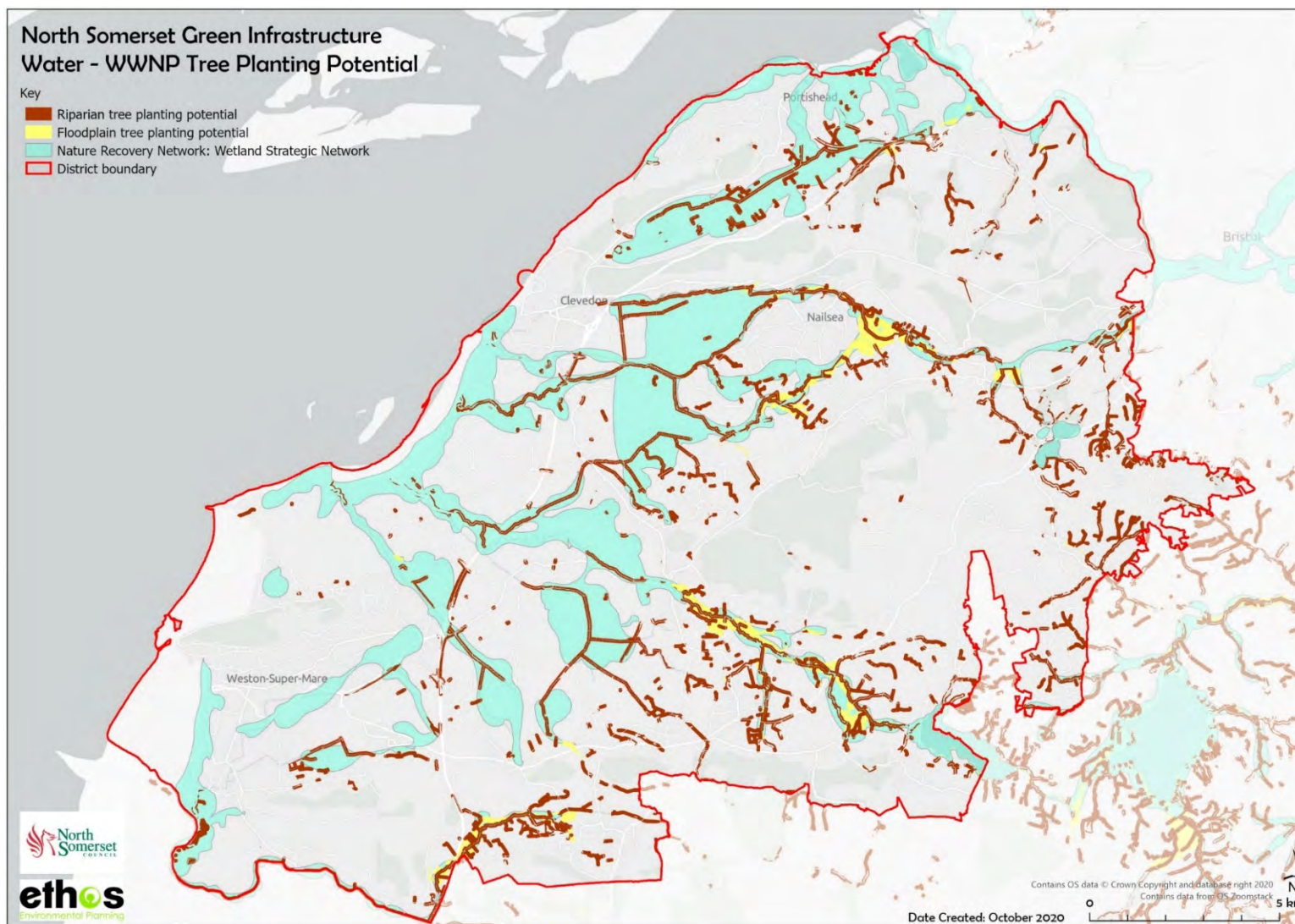


Figure 23 - EA Working with Natural Processes (Riparian tree planting potential and floodplain tree planting potential)

3.0 Biodiversity and habitats

3.1 Woodland

Table 9, Table 10 and Figure 24 below highlight some specific opportunities for improving the connectivity and quality of woodland habitat, drawing on various sources including SSSI condition assessment, NRN data (which utilised the Natural England Habitat Natural England Habitat Network¹ dataset), as well as dormouse records (see Figure 25).

Table 9 - Opportunities for improving woodland connectivity

Arrow Label	Opportunity
1	Connect fragmented woodland areas to create corridor of woodland, which will link 2 large networks. Will link three Ancient woodlands: Fullers Hay (south), Hanging Wood (middle) and Scars/Lye Wood (north). Arrow passes through 2 WENP Opportunities. Soil wash: runoff seen most years in this area.
2	Connect several areas of ancient woodland, west to east: Buddings Wood, Hails Wood, Leigh Wood/Markham Bottom, Old Park Wood/Vowles Bottom, and Leigh Wood/ Oak Wood. Soil wash: runoff seen most years in this area.
3	Connect two large areas of ancient woodland; Buddings Wood and Parsonage/Dunhill/Chummock Woods.
4	Link fragmented ancient woodlands; Bourton Combe, Breach Hill Wood, Crossgrove Wood and Barrow Wood,
5	Connect small fragmented woodlands between two areas of ancient woodland: Chelvey Wood and Bourton Combe. Avoiding Quarry in middle. Soil Wash seen most years.
6	Connect fragmented ancient woodland areas (Simshill, Prestow/Shippenhays Woods, Whitley Coppice/Tuckers Grove, Little Horts and Horts Wood) to create corridor of woodland, which will link 2 large networks.
7	Riparian planting potential. Could link three areas of woodland together. Soil Wash: runoff seen most years.
8	Failand Ridge Woodlands; connection opportunities.
9	Failand Ridge Woodlands; connection opportunities.
10	Failand Ridge Woodlands; connection opportunities.

Table 10 - Opportunities for improving woodland quality

Point Number	Opportunity
1	Connect two ancient woodlands. Riparian woodland potential. WENP have identified as opportunity.
2	Improve condition of Walton Common SSSI (Condition is 'Unfavourable Declining' and more than half the site is Broadleaved Woodland).
3	Improve condition of Gordano Valley SSSI (Current condition is 'Unfavourable Declining' and half of the site is Broadleaved Woodland).
4	Improve condition of SSSI woodland to create better link between SSSI and ancient woodland
5	Connect Knowle Wood with Dolebury Warren. This will link Ancient woodland with SSSI woodland. Land is currently grazed fields/hedgerow.

Point Number	Opportunity
6	Connect Elborough Wood to Benthills Woods (ancient woodlands)
7	Create wider connecting woodland between two SSSI woodlands . Current connecting woodland is narrow because grazed field in middle. Soil wash: run off most years.
8	Link two large ancient Woodlands
9	Create continuous link between ancient woodland (land is currently grazed fields)
10	WENP Opportunity with Riparian planting potential
11	WENP NRN Woodland Connectivity Opportunity
12	WENP NRN Woodland Connectivity Opportunity
13	WENP NRN Woodland Connectivity Opportunity
14	Opportunity to connect two large areas of Broadleaved woodland: Tyntersfield Plantation and Truckle Wood
15	Opportunity to connect two large areas of Broadleaved woodland: Tyntersfield Plantation and Truckle Wood
16	Link Benthills Wood and Ancient woodland to the south. Land is currently arable.

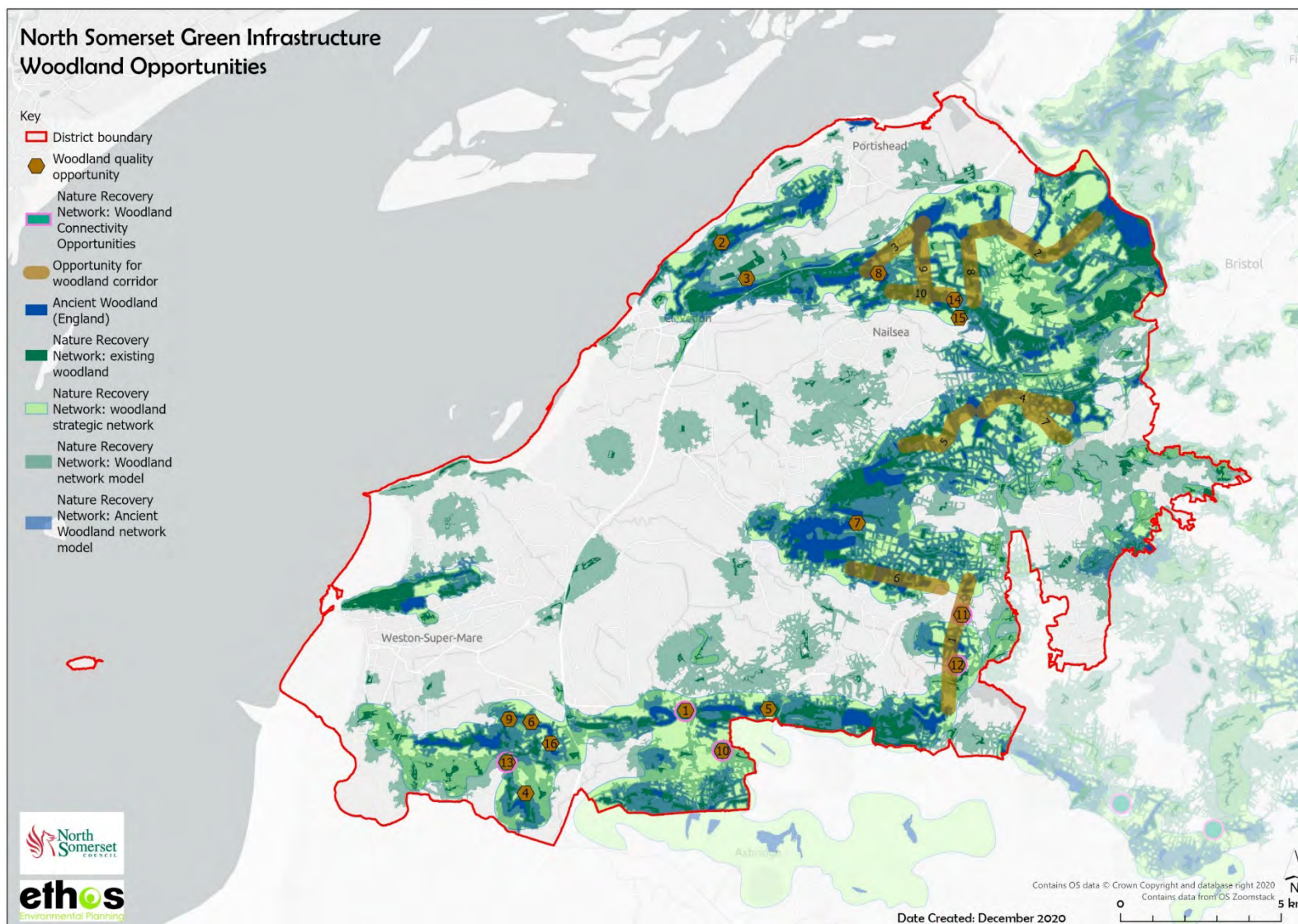


Figure 24 - North Somerset Green Infrastructure Woodland Opportunities

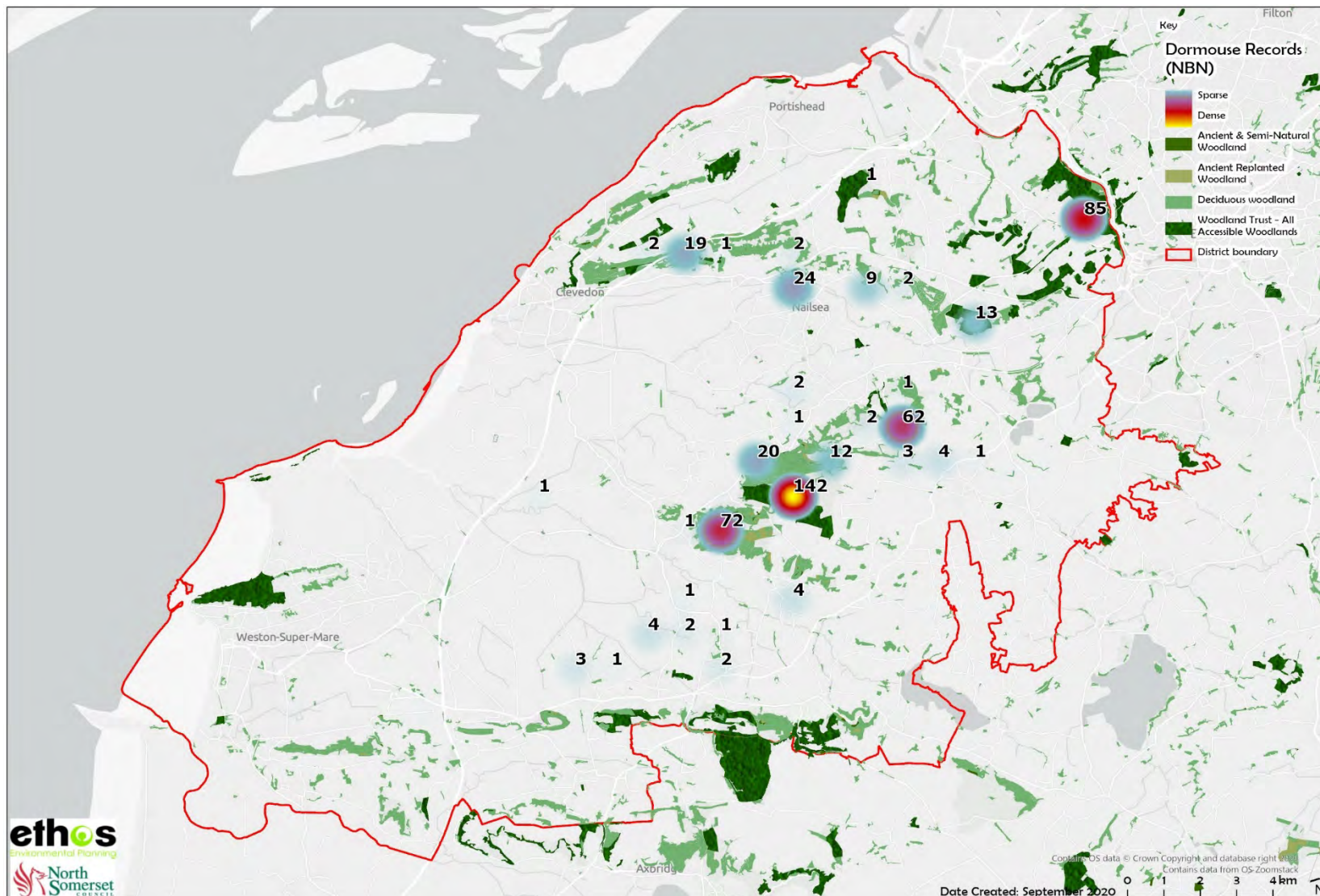


Figure 25 - North Somerset Dormouse Records

3.2 Grassland

Table 11 and Figure 26 below highlight some specific opportunities for improving the connectivity and quality of grassland habitat, drawing on various sources including SSSI condition assessment, NRN data (which utilised the Natural England Habitat Network mapping²) and the strategic GI corridors developed as part of this strategy.

Table 11 - Opportunities for improving grassland

Number	Opportunity
1	Opportunity to improve connectivity of grassland and traditional orchards (North Somerset Levels and Moor Partnership)
2	Improve Walton Common (calcareous grassland SSSI). 100% unfavourable - declining
3	Improve Dolebury Warren, Avon Wildlife Trust Site. 91% unfavourable - recovering
4	This field and the LWS adjoining are identified by Natural England as sites for Habitat Restoration and Creation
5	Priority habitat around this point identified by Natural England as sites for Habitat Creation/Restoration
6	This strip identified by Natural England as area for Habitat Creation/Restoration
7	Identified as area for Habitat Creation by NE? But down as existing grassland LWS by Council. Key site as part of Crook Peak Nature Reserve/SSSI.
8	Core Grassland but SSSI (Shiplait Slait) is unfavourable declining
9	Habitat Restoration/Creation identified near existing Lowland Calcareous Grassland.
10	Key connectivity potential identified by NRN linking lowland dry acid grassland adjacent to the airport through existing grassland to assets at Winford.
11	Identified as suitable for habitat creation/restoration by Natural England, next to lowland dry acid grassland.

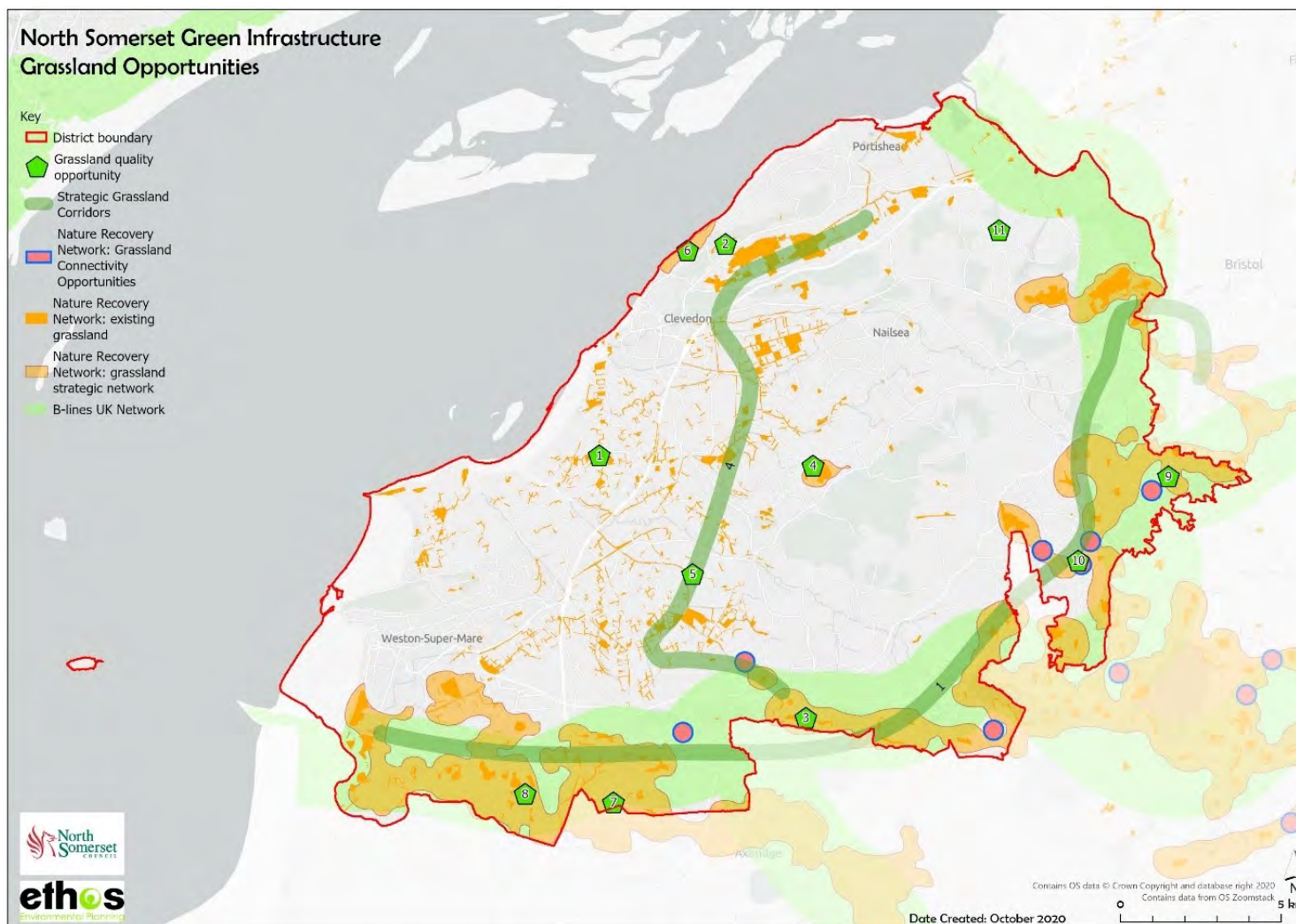


Figure 26 - North Somerset Green Infrastructure Grassland Opportunities

4.0 Open Space and Access routes/PROW

When looking at accessible open space across the district (see Figure 27 below) and applying an access buffer of 300m to these publicly accessible open spaces (see Figure 28 below, and Section 8.3.3 of main report), there appears to be good access to open space in general. However, it is recommended that an update open space assessment is undertaken in order to review the provision of open space, particularly in terms of the specific typologies of open space e.g. parks, amenity green space, natural green space, play space, allotments etc. and associated standards for quantity, access and quality.

Opportunities to improve key strategic access routes have been identified through the policy and strategy review and consultation with NSC Natural Environment Team and are summarised in Table 12 and Figure 28 below.

Table 12 - Opportunities for improving access routes/PROW

Arrow number	Opportunities
1	Improve connection between Weston and the northern towns. Opportunity to connect two national cycle routes.
2	Increase access between Weston and Bleadon
3	Increase access from Bleadon to Banwell
4	Use Wrington light railway to create a multi-user route
5	Extend Strawberry Line to Clevedon
6	Increase access between Nailsea and Backwell. Lack of cycling and walking routes. Connectivity should include the railway station.
7	Development of England Coastal Path - currently being determined by Secretary of State. Will run from River Avon at Avonmouth to River Axe at Brean Down.
8	Tuthill Sluice Cycle Route.

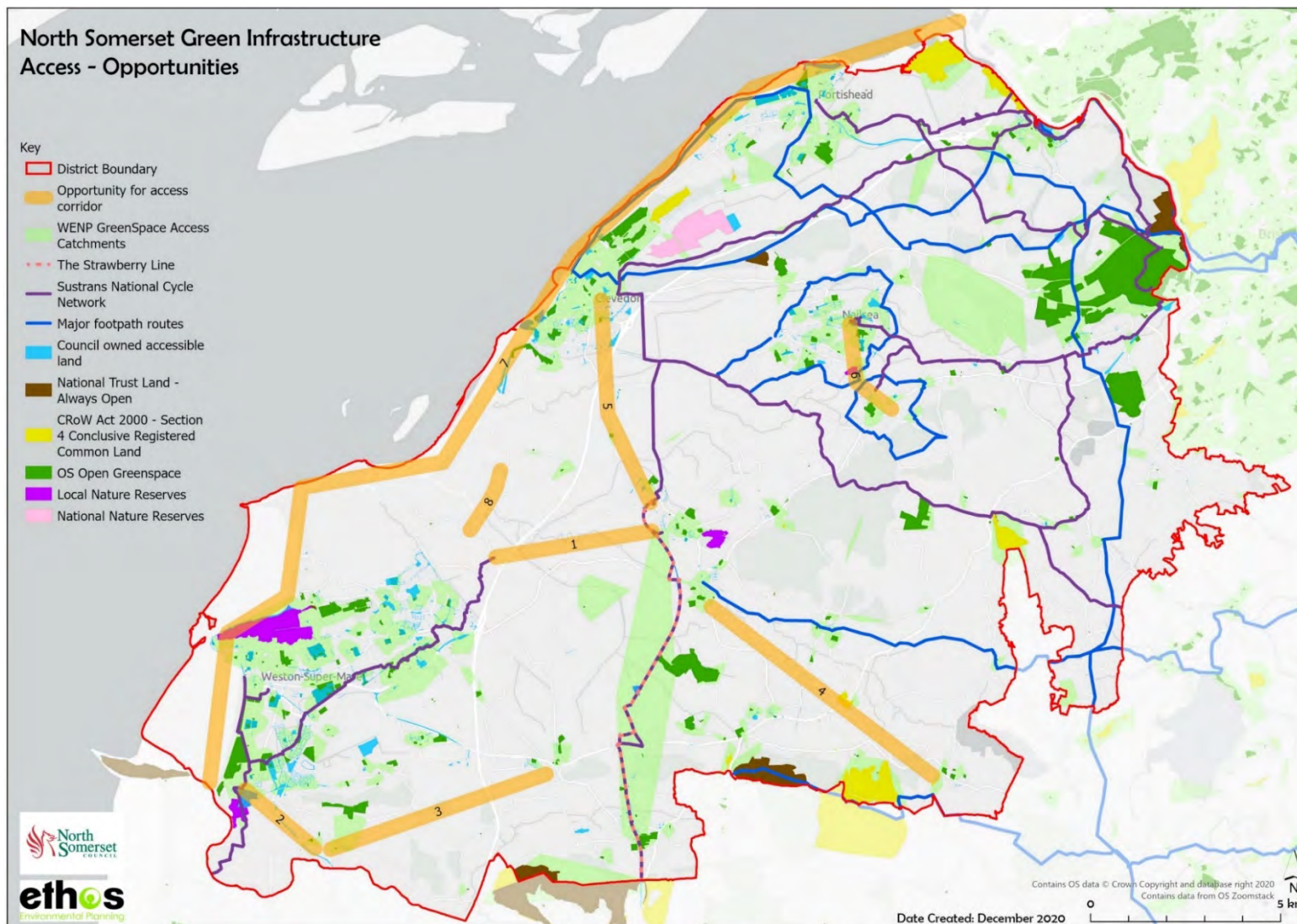


Figure 27 - Potential to improve strategic access routes

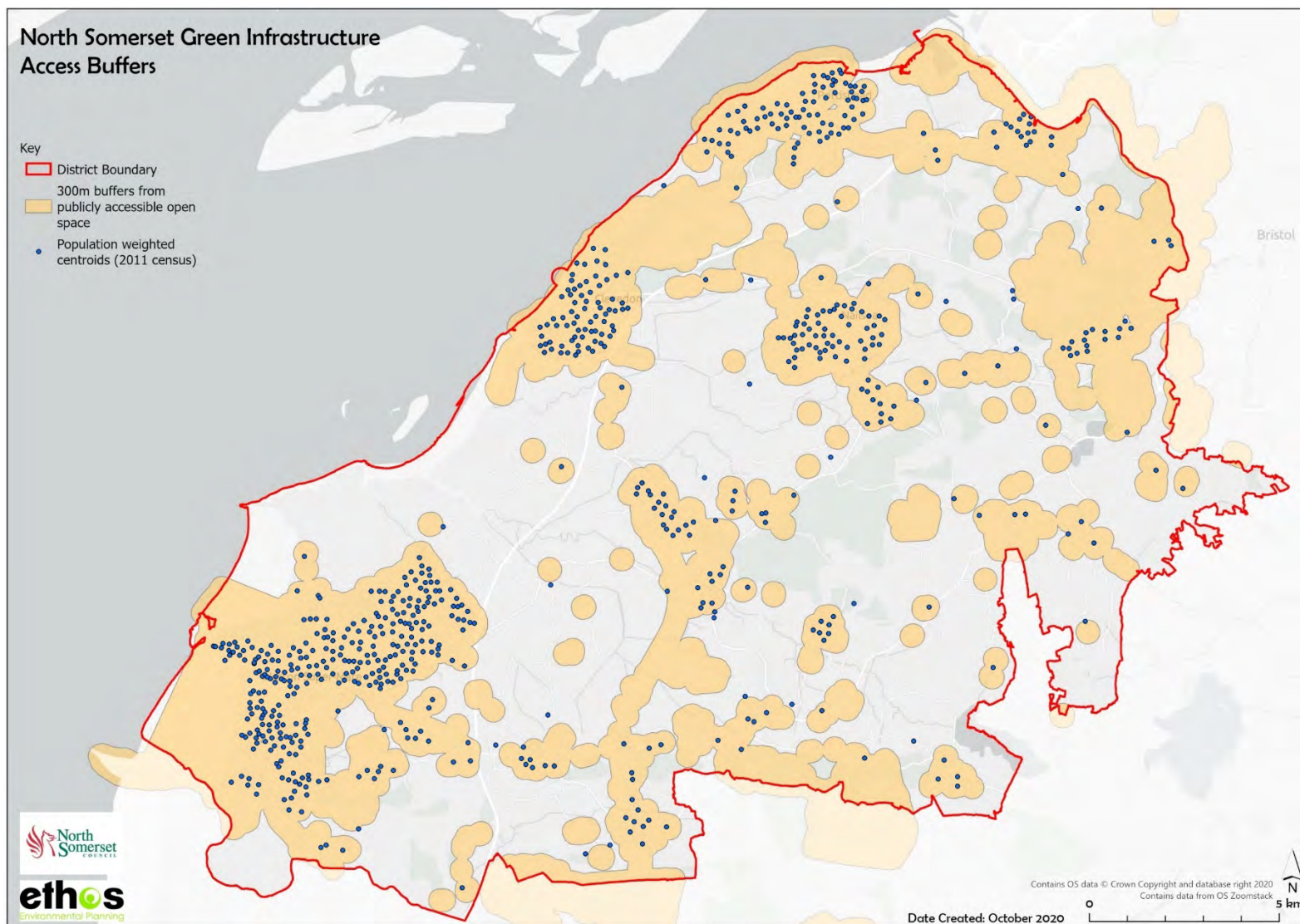


Figure 28 - Access to open space (300m buffer)

Landscape Character Types	Landscape Character Areas
A. Moors	
	A1. Kingston Seymour and Puxton Moors
	A2. Clapton Moor
	A3. Kenn and Tickenham Moors
	A4. Locking and Banwell Moors
	A5. Bleadon Moor
B. River Flood Plain	
	B1. Land Yeo, Kenn River and River Avon Flood Plain
	B2. Lox Yeo River Flood Plain
C. Settled Coastal Edge	
	C1. Weston Bay Settled Coastal Edge
	C2. Portbury Settled Coastal Edge
D. Limestone Gorges	
	D1. Avon Gorge
E. Limestone Ridges and Combes	
	E1. Mendip Ridges and Combes
	E2. Worlebury Ridges and Combes
	E3. Middlehope Ridges and Combes
	E4. Portishead Ridges and Combes
	E5. Tickenham Ridges and Combes
	E6. Cleeve Ridges and Combes
F. Sandstone Uplands	
	F1. Abbots Leigh Sandstone Uplands
G. Settled Limestone Plateau	
	G1. Broadfield Down Settled Limestone Plateau
	G2. Failand Settled Limestone Plateau
H. Settled Hills	
	H1. Dundry Hill
J. Rolling Valley Farmland	
	J1. Lox Yeo Rolling Valley Farmland
	J2. River Yeo Rolling Valley Farmland
	J3. Chew Rolling Valley Farmland
	J4. Colliters Brook Rolling Valley Farmland
	J5. Land Yeo and Kenn Rolling Valley Farmland
	J6. Avon Rolling Valley Farmland
K. Farmed Coal Measures	
	K1. Nailsea Farmed Coal Measures
L. Inter-tidal Bays	
	L1. Weston Bay
	L2. Sand Bay
	L3. Woodspring Bay
	L4. Clevedon-Portishead Bays

Figure 29 - landscape character assessment

APPENDIX 5: NSC ‘REWILDING’ AREAS

The most up to date mapping for the proposed areas for rewilding North Somerset Council owned land can be found here:

<http://map.n-somerset.gov.uk/Rewilding.html>

APPENDIX 6: FUNDING OPPORTUNITIES FOR GI

The funding for delivery of the strategic GI network and GI projects could come from a variety of sources. This Appendix identifies some of the funding opportunities that may be available.

Funding opportunities include the following:

- Developer contributions (S106 and CIL) e.g. provision of open space to meet local authority standards, or funding for strategic GI through CIL.
- Agri-environment schemes and land management schemes e.g. Higher Level Stewardship, Entry Level Stewardship, English Woodland Grant Schemes, and the emerging Environmental Land Management System (ELMS).
- Business and organisation sponsorship e.g. as part of corporate social responsibility programmes.
- Endowments - A financial endowment is a transfer of money or property donated to an institution or Trust, which may come with stipulations regarding its usage.
- Charitable donations
- Landfill Communities Fund - The Landfill Communities Fund (formerly the Landfill Tax Credit Scheme) enables landfill site operators to claim tax credit for contributions they make to approved environmental bodies for spending on projects that benefit the environment. The environmental bodies are those enrolled by Entrust, the regulatory body for the scheme.
- Habitat Banking (e.g. for biodiversity net gain, or nitrate/phosphate offsetting) - Revenues from development schemes requiring off-site mitigation are collected into a central fund and invested in specific habitat creation/restoration projects.
- Carbon offsetting – This is a means of compensating for all or part of unavoidable carbon emissions made by businesses, organisations and individuals. A carbon offset fund could choose to invest in Green Infrastructure projects that absorb an equivalent amount of carbon dioxide and which are cost effective to deliver.
- Local Authority capital and revenue budgets
- Heritage Lottery Fund – provides funding for improving and sustaining a wide range heritage – including museums, parks and historic places, archaeology, the natural environment and cultural traditions.
- Third sector funding and contributions e.g. RSPB, Avon Wildlife Trust, Woodland Trust, National Trust, British Horse Society, The Forest of Avon Trust, voluntary contributions as part of community action and initiatives.

The table below provides more detail around some of the current funding opportunities available.

Table 13 - current funding opportunities available for improving GI

Scheme owner and scheme name	Outline of scheme	When to apply for funding	Webpage
The Tree Council: Branching Out	Funds available to assist schools and community groups proposing to undertake well-planned tree and hedge planting projects this winter. This includes grants of between £300 and £1500. Planting is to take place between November 2020 and March 2021.	There is no deadline for applications, but applicants must ensure that they can plan and execute their project, and claim the funding upon completion, by the end of March 2021.	https://treecouncil.org.uk/take-action/grants-for-trees/
Woodland creation grant: Countryside Stewardship	The government is offering grants of up to £6,800 per hectare to help landowners, farmers and foresters expand existing woodland cover.	Ongoing	https://www.gov.uk/guidance/woodland-creation-grant-countryside-stewardship
Tesco's 'Bags of Help' scheme	Grants of between £1,000-£4,000 to fund community improvement projects , including play areas, allotments and school grounds.	Ongoing	https://www.groundwork.org.uk/apply-for-a-grant/national-grants/grants-tesco-community-grants/
SUEZ Communities Trust – Landfill Communities Fund	Provides funds to not-for-profit organisations to undertake work that is eligible under the Landfill Communities Fund (LCF), which includes public amenities, biodiversity and historic sites.	Ongoing	https://www.suezcommunitiestrust.org.uk/apply-for-funding/england/
ENTRUST funding – Landfill Communities Fund	Funding for organisations enrolled with ENTRUST. Projects can include the provision or improvement of a public park, promotion of biodiversity and more.	Ongoing	https://www.entrust.org.uk/landfill-community-fund/
Power to Change	Provide grant funding to community lead business that are tackling challenges in their local area,	Ongoing	https://www.powertochange.org.uk/

Scheme owner and scheme name	Outline of scheme	When to apply for funding	Webpage
	which have included community gardens.		
idverde UK – Community Investment Fund	Communities can apply for up to £1,000 towards projects which empower people to improve green spaces, enhance the environment and boost wellbeing. Both financial and physical resources will be provided by the funder, green space contractor idverde UK, and is only available in places where the company already works – which includes North Somerset (Wsm).	Ongoing	https://www.spacehive.com/profile/idverdeicif
Trees for Cities	Trees for Cities are looking to support local authorities, charities and other organisations to plant small to medium (0.5 – 7ha) size tree schemes, particularly partners with sites in areas that are outside of London which suffer from multiple deprivation.	December 2020	Scheme details
The Woodland Trust Tree Packs (not funding)	For Schools and Community Groups . Tree packs that can be chosen are: Hedge, Copse, Wild Harvest, Year Round Colour, Working Wood, Wild Wood, Wildlife or Urban Trees. Must have permission from the landowner.	Ongoing - currently taking applications for trees to be delivered in March 2021.	https://www.woodlandtrust.org.uk/plant-trees/schools-and-communities/

APPENDIX 7: EXAMPLES OF NATURAL CAPITAL ACCOUNTING TOOLS

Some examples of recent natural capital tools are summarised below (these are not recommendations).

OrVAL – Outdoor Recreation Valuation Tool (released 2018)¹: Freely accessible web-based tool that predicts the number of visits to existing and new greenspaces in England and estimates the welfare value of those visits in monetary terms. Users can examine the recreational value of existing green space and test how the number of visits and the value of these visits might change if the land cover was changed, or if new green spaces were created. Results can be split by socio-economic group. It was developed by the University of Exeter and funded by Defra.

Greenkeeper (released in 2020)²: This tool has played a key role in the Future Parks Accelerator (FPA) programme since 2019. Greenkeeper provides a complete baseline assessment of all greenspaces within urban areas. A single greenspace or complete portfolio review of greenspace assets can be undertaken. The value each provides is broken down into physical health, wellbeing, local value and carbon sequestration to understand how it is performing socially, economically and environmentally. When combined with operating costs, etc it can provide a comprehensive view of the contribution greenspace is making. It was developed by the University of Exeter, Vivid Economics and Barton Willmore.

Pollution Removal by Vegetation (released 2019)³: This tool calculates and values the human health benefits of trees in each local authority, based around differences in pollution levels, local population, tree cover and climate. The tool calculates the health benefits of removing PM2.5 per hectare of trees for each local authority area in pounds (£). It was developed by Economics for the Environment (EFTEC) and the UK Centre for Ecology & Hydrology (UKCEH).

Natural Capital Planning Tool (NCPT) (published in March 2018 with latest revision in May 2019)⁴: Developed to give local authorities, planners and developers a fit-for-purpose, easy-to-use tool which enables them to effectively and efficiently implement environmental net-gain. The tool allows the user to assess the impact of new or proposed developments and plans on the value of Natural Capital and ecosystem services. The tool calculates a development impact score for 10 different ecosystem services, indicating the direction and magnitude of the impact on each assessed service as well as all services combined over a 25 year timescale post-development. The tool also shows the maximum potential scores for each ecosystem service towards which designers can work to achieve the best outcomes in terms of ecosystem services delivery through smart design. It was developed by Consultancy for Environmental Economics & Policy (CEEP).

This publication is available in large print, Braille or audio formats on request.

Help is also available for people who require council information in languages other than English.

Please contact 01934 426 775

