A Green and Blue Infrastructure Strategy for Tonbridge and Malling

March 2024

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1 Introduction

1.1 Purpose of the Report

1.1.1 In 2019 Tonbridge and Malling Borough Council (TMBC) declared a climate and biodiversity emergency. This Green Infrastructure (GI) Strategy will provide a framework for protecting, enhancing, and connecting the Borough's natural infrastructure and assets, as well as identifying potential mechanisms for delivery through a range of council activities. Recommendations from the Strategy can help ensure that spaces and habitats are well adapted to a changing climate while helping to protect and enhance native species and habitats and deliver net gains in biodiversity, as well as promoting opportunities for environmental management and enhancement.

1.1.2 This document can support the delivery of two of TMBC's aims from the Corporate Strategy: 'sustaining a Borough which cares for the environment' and 'improving housing options for local people whilst protecting our outdoor areas of importance'. The strategy considers existing data and national and local literature to develop clear, evidence-led baseline assessment and goals for green and blue infrastructure improvements across the Borough. Its purpose is to provide a proportionate approach to fulfilling the Council's duties in respect to legislative requirements, deliver elements of the Corporate Strategy and Climate Change Strategy, and provide evidence for the Local Plan.

1.1.3 This document sets out the baseline and key opportunities for TMBC to protect and enhance its GI across the Borough to deliver environmental benefits that address the challenges it faces now and in the future. The first section describes GI, its importance, and outlines the legal and policy context. Section two provides a baseline, describing the Borough's natural assets via a desktop assessment, outlines the Borough's GI provision in 2024, the third section looks at access to green space, with section four providing an assessment of GI potential across greenspaces. Section five identifies gaps, risks and opportunities in the Borough's current provision. Section six following on from this, models the GI potential on TMBC owned land. The seventh section gives recommendations for the Local Plan and other Council functions, and the eighth section provides a conclusion.

1.2 What is Green Infrastructure?

1.2.1 Green Infrastructure (GI) is defined in the National Planning Policy Framework[1] as:

"*A network of multi-functional green and blue spaces and other natural features, urban and rural, which is capable of delivering a wide range of environmental, economic, health and well-being benefits for nature, climate, local and wider communities and prosperity*."

1.2.2 These GI assets include open spaces such as parks and gardens, allotments, woodlands, fields, and hedges. They also include private gardens, street trees, green roofs and walls, and sustainable drainage systems (SuDS). Additionally, water bodies such as rivers, streams, canals, lakes, and ponds are sometimes referred to as Blue Infrastructure (BI). For the purposes of this document the abbreviation GI can be taken to include Blue Infrastructure (BI). Green and Blue infrastructure can work at a range of scales, from small private gardens to large scale nature reserves. Although no type of GI is more important than another, the assessment in this document focuses on the two largest, those for which data is most readily available, the Neighbourhood and the Wider Countryside. Examples of assets at each scale can be seen in Figure 1.

[1] The National Planning Policy Framework (NPPF) (Dec 2023)

Figure 1. GI Assets at varying scales.

1.2.3 Well-designed GI can function within urban and rural environments to provide a range of Nature-based Solutions (NbS), which are defined by the International Union for Conservation of Nature (IUCN) [2] 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"*. Some of these challenges include improving health and well-being, improving air quality, addressing and adapting to climate change, ensuring food security, addressing social inequality, and addressing unemployment through the creation of new work opportunities in the planning and delivery of GI improvements. GI can also lead to increased labour productivity by providing a healthy and pleasant environment for workers. GI has the potential to enhance local tourism by providing opportunities for outdoor recreation and leisure[3].

[2] United Nations Biodiversity Conference of the Parties (COP15) (2022)

[3] The Economic Benefits of Green Infrastructure (forestresearch.gov.uk) (2008)

1.3 Why is Green Infrastructure Important?

1.3.1 Whilst there have been some gains nationally, such as the recovery of the otter population and the increase in the number of breeding pairs of red kite, overall biodiversity loss in England has been increasing in recent years. Habitats are becoming more fragmented; many species are declining, and soil loss and degradation is taking place[4]. The UK has recognised that action is needed at both broad landscape and local scales.

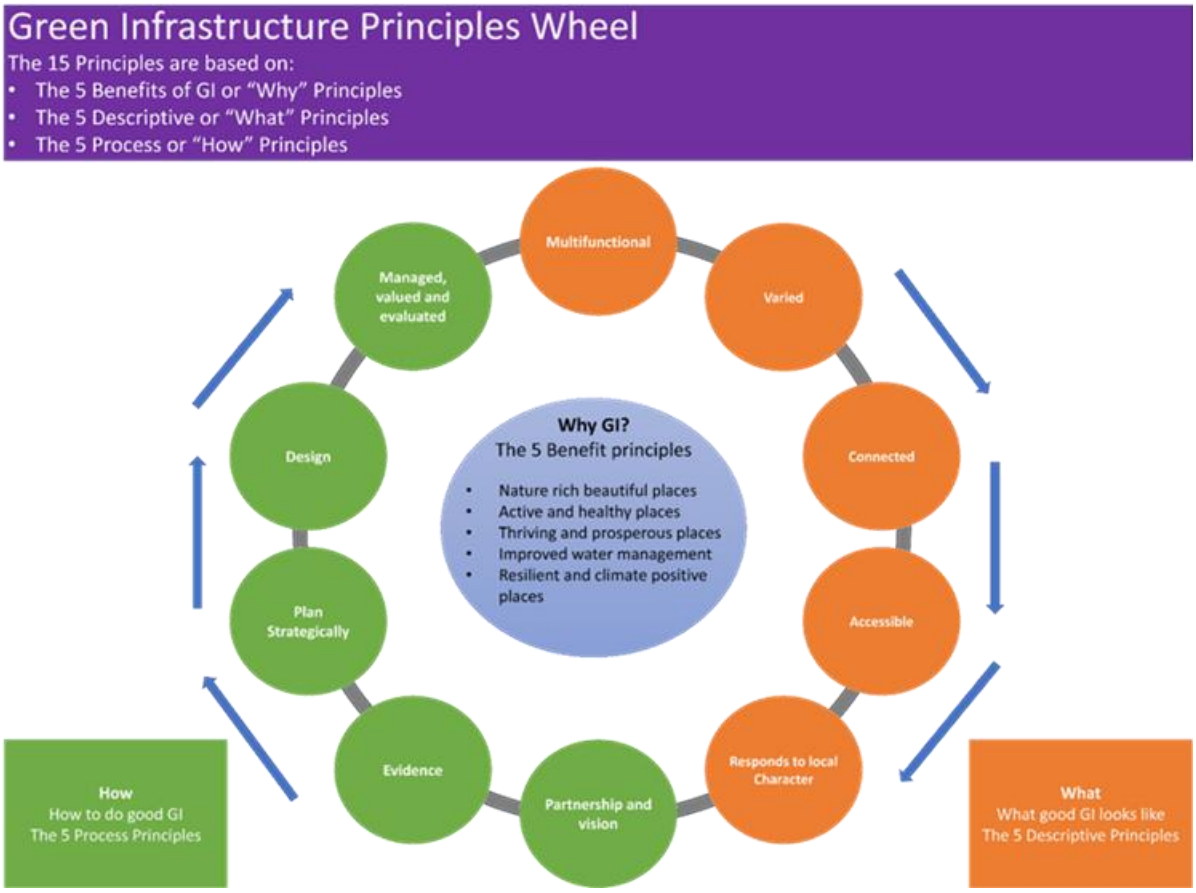
1.3.2 GI is integral to thriving wildlife and makes valuable contributions to health and well-being through increased accessibility to nature for members of the public. GI assets can be publicly and privately owned, with or without public access, and can perform a single function or be multifunctional in nature. They can include designated/protected assets, as well as wider countryside and urban features.

1.3.3 Natural England has developed a set of GI Principles[5] that underpin their recommended GI Framework. The GI Principles are intended to provide a baseline for different organisations to develop stronger GI policy and delivery. They outline why, what, and how GI should be delivered. Whilst the principles are not currently mandatory, they are best practice when planning for GI. They were developed in line with research and are based on case studies of GI strategies from around the world. These principles underpin all planned actions within the TMBC GI Strategy to ensure that development and delivery of the strategy is effective and provides maximum benefit to nature and society.

[4] State of Nature Report, State of Nature Report (2023)

[5] Natural England Green Infrastructure Principles (2023)

Figure 2. Green Infrastructure Principles Wheel.



1.3.4 The 5 main benefits of GI (Figure 2), as listed by Natural England are:

- Nature-rich and beautiful places - the biodiversity declines evidenced in the 2023 State of Nature Report[6] highlights the need to go beyond traditional conservation practices, which predominantly focus on habitat creation and enhancement within dedicated nature reserves. It is essential that implementation needs to go beyond protected sites to provide opportunities for wildlife within urban areas and to improve connectivity within the landscape.
- Active and healthy places - GI can improve the well-being of a neighbourhood with opportunities for recreation, exercise, social interaction, experiencing and caring for nature, community food-growing and gardening, all of which can bring mental and physical health benefits.
- Thriving and prosperous communities - GI can contribute to economic growth and investment by improving a region's image, attracting high-value industry,

[6] State of Nature Report, State of Nature Report (2023)

entrepreneurs, and workers, and increasing land and property values[7], helping to create high quality environments which are attractive to businesses and investors.

- Improved water management - GI can also be an integral part of multifunctional sustainable drainage and natural flood risk management, as well as water harvesting to ensure availability in times of low rainfall.
- Resilient and climate positive places - GI can contribute to carbon storage, cooling and shading, opportunities for species migration to more suitable habitats and the protection of water quality and other natural resources.

1.4 Legal and Policy Context

Introduction

1.4.1 The following section provides an overview of the legal and policy framework which has been developed to address the climate and biodiversity crises and improve the health and well-being. It demonstrates how this GI Strategy will address the relevant legislative and policy requirements as well as the objectives of other local strategies.

Key Legislation

1.4.2 There are several key pieces of legislation which set out the responsibilities and requirements of the Council in respect of GI and act as a driver for the implementation of a GI Strategy.

1.4.3 **The Wildlife and Countryside Act (1981)**[8] provides the primary legislative framework for the protection of wildlife and nature conservation in the UK including the protection of birds, mammals, reptiles, and plants.

1.4.4 Linked to this is the duty placed on all public authorities in England and Wales under the **Natural Environment and Rural Communities Act (2006)**[9] to have regard, in the exercise of their functions, to the purpose of conserving biodiversity. By developing and implementing this GI Strategy the Council will be delivering on this duty and providing a strategy which will have the protection and enhancement of the natural environment at its heart.

1.4.5 **The Environment Act (2021)**[10] has strengthened the biodiversity duty placed on all public authorities (requiring them to conserve and enhance biodiversity) and introduced, amongst other requirements, the need for developments to deliver at least a 10% increase in biodiversity as well as the implementation of Local Nature Recovery Strategies to support a Nature Recovery Network. This GI Strategy links directly with these requirements by establishing opportunities and recommendations on where Biodiversity

[7] The Economic Benefits of Green Infrastructure (forestresearch.gov.uk) (2008)

[8] Wildlife and Countryside Act (1981)

[9] Natural Environment and Rural Communities Act (2006)

[10] Environment Act (2021)

Net Gain (BNG) can be delivered on Council owned land and identifying areas of strategic importance in supporting a Local Nature Recovery Strategy.

1.4.6 **The Countryside and Rights of Way Act (2000)**[11] provides a public right of access to land mapped as 'open country' or registered common land. The Act also increased the requirements for the management and protection of Sites of Special Scientific Interest (SSSI). GI, as a natural capital asset, provides benefits that include outdoor recreation and access as well as enhanced biodiversity and landscapes. The Act plays an important role in the development of a GI Strategy with public access to the natural environment being a key factor when identifying the most appropriate locations for improved access for nature for example.

1.4.7 **The Climate Change Act (2008)**[12] was amended in 2019 to legislate a long-term, economy-wide target to reach net-zero greenhouse gas emissions by 2050. The Climate Change Act establishes the Climate Change Committee as an independent advisory body, sets out the governments' duties regarding a legally binding long-term target (to be updated with new scientific developments) and carbon budgets to create a credible pathway and track progress, and around which to make policy choices. The Act requires the UK Government to produce a UK Climate Change Risk Assessment. It is this assessment that clearly shows that climate change is a risk to natural capital (habitats, ecosystems). Addressing this risk thus requires action on climate change mitigation and adaptation, but also a specific understanding of natural capital and local environmental conditions - that is the driver for a GI strategy. GI is key in addressing the climate emergency and the Act provides a clear driver to introduce a GI Strategy with measures that actively address climate change, for example through the implementation of nature-based solutions.

1.4.8 **The Agriculture Act (2020)**[13] introduced an Environmental Land Management (ELM) Scheme of payments from 2024 which aims to incentivise farmers and land managers to improve the natural environment alongside food production[14]. The requirements of the Act are an important consideration when developing a GI Strategy as they may influence the design and management of GI on or adjacent to land that forms part of the scheme.

1.4.9 **The Flood and Water Management Act (2010)**[15] provides for the comprehensive management of flood risk for people, homes, and businesses as well as aiming to reduce the flood risk associated with extreme weather[16]. This GI Strategy provides the opportunity to strategically plan for the implementation of, for example, nature-based solutions, such as sustainable urban drainage systems, which will reduce flooding and provide a sustainable means of flood risk management which is driven by the Act.

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[11] Countryside and Rights of Way Act (2000)

[12] Climate Change Act (2008)

[13] Agriculture Act (2020)

[14] Environmental Land Management (ELM) update

[15] Flood and Water Management Act (2010)

[16] Guidance - Flood Risk Management

1.5 Key Policy and Guidance

National

1.5.1 **The National Planning Policy Framework (NPPF updated December 2023)**[17] sets out the Government's planning policies for England and how these should be applied. The policy requirements of the NPPF are a clear driver in the development and adoption of a GI Strategy. Paragraph 181 of the framework requires plans to conserve and enhance the natural environment by taking a strategic approach to maintaining and enhancing networks of habitats and GI and to plan for the enhancement of natural capital at a catchment or landscape scale across local authority boundaries. Paragraph 20 of the NPPF highlights a need for GI networks stating that strategic policies should set out an overall strategy that makes sufficient provision for the conservation and enhancement of GI.

1.5.2 Paragraph 185 emphasises the need to protect and enhance biodiversity and geodiversity, therefore plans should:

a) Identify, map and safeguard components of local wildlife-rich habitats and wider ecological networks, including the hierarchy of international, national and locally designated sites of importance for biodiversity; wildlife corridors and stepping stones that connect them; and areas identified by national and local partnerships for habitat management, enhancement, restoration or creation; and

b) promote the conservation, restoration and enhancement of priority habitats, ecological networks and the protection and recovery of priority species; and identify and pursue opportunities for securing measurable net gains for biodiversity.

1.5.3 Under Paragraph 96 of the NPPF, planning policies should aim to achieve healthy, inclusive, and safe places which enable and support healthy lifestyles, especially where this would address identified local health and well-being needs through the provision of safe and accessible GI. Connected to health and well-being, Paragraph 192 requires planning policies to identify opportunities to improve air quality or mitigate impacts through GI provision and enhancement.

1.5.4 Lastly, and in respect of climate change, Paragraph 159 states that when new development is brought forward in areas which are vulnerable to the effects of climate change, care should be taken to ensure that risks can be managed through suitable adaptation measures, including through the planning of GI.

1.5.5 **The National Planning Practice Guidance**[18] provides further clarification on the policies within the NPPF as well as the plan making process. The NPPG includes clear guidance on how a strategic approach can be taken to GI and drives forward the need to create and adopt GI Strategies. The NPPG emphasises the importance of a strategic approach to identifying the location of existing and proposed GI networks and the setting out of appropriate policies for their protection and enhancement. The NPPG also highlights the

[17] National Planning Policy Framework (2023)

[18] Guidance – Natural Environment (2024)

need for GI Strategies to be evidence-based and to include assessments of the quality of current GI and any gaps in provision.

1.5.6 The Government's **25 Year Environment Plan (2018)**[19] sets out a framework to maintain and improve the environment for the next generation. It commits to achieving ten goals including reducing risk of harm from environmental hazards such as flooding and drought along with managing pressures on the environment by mitigating and adapting to climate change. The plan aims to focus its actions around six key areas. These areas are linked with GI and drive the development of a GI Strategy. For example, part 3 seeks to create or restore 500,000 hectares of wildlife-rich habitat outside the protected sites network. While the plan doesn't specify an exact deadline, it reflects the commitment to achieving this target within the 25-year timeframe. By strategically planning for the creation or enhancement of sites to form wildlife corridors this GI Strategy can contribute towards this action. Part 6 also seeks to ensure that there are high-quality, accessible, natural spaces close to where people live and work, particularly in urban areas, and to encourage more people to spend time in them to benefit their health and well-being. Again, this GI Strategy can identify opportunities for the enhancement of GI with public access close to existing development so that it can meaningfully benefit residents.

1.5.7 This document also sets out how the goals of the 25 Year Environment Plan and the targets of the Environment Act will combine to drive specific improvements in the natural environment. The **Environmental Improvement Plan (2023)**[20] is clear through its targets and commitments that the biodiversity and climate crises are intrinsically linked and that in order to halt biodiversity loss and ecosystem degradation it is essential to limit or prevent further climate change as well as adapting to changes and mitigating impacts that can no longer be stopped.

1.5.8 The goals and proposed actions of the Environmental Improvement Plan are mirrored, in part, by the policies of the **Net Zero Strategy (2021)**[21] which provides a long-term vision for a decarbonised economy in 2050. The Environmental Improvement Plan and the Net Zero Strategy demonstrate that an effective means of addressing both the biodiversity and climate crises can be through the delivery of GI. Both documents look to the implementation of nature-based solutions (referred to as nature-based greenhouse gas removals in the Net Zero Strategy) as a means of carbon capture and improving biodiversity. Examples of these nature-based solutions include the creation, restoration, and management of peatland and biodiverse woodland.

1.5.9 Following the 25 Year Environment Plan and the enactment of the Environment Act, Natural England has introduced a **GI Framework**[22]. While not mandatory this provides a non-statutory framework and best practise guide to help develop GI strategies and to plan, design and deliver GI. The Framework includes standards which define what good GI looks

[19] A Green Future: Our 25 Year Plan to Improve the Environment (2018)

[20] Environmental Improvement Plan 2023 - GOV.UK (www.gov.uk)

[21] Net Zero Strategy: Build Back Greener (2021)

[22] Green Infrastructure Framework (2023)

like for planners, developers, parks and greenspace managers, and communities, and advises how to plan strategically to deliver multiple benefits for people and nature.

1.5.10 The White Paper, **'The Natural Choice: securing the value of nature' (2011)**[23] highlights the importance of green spaces to the health and happiness of local communities. In the context of this GI Strategy, the White Paper sets out the need to protect and improve the natural environment by taking actions across sectors rather than treating environmental concerns in isolation. The approach to doing this includes facilitating greater local action to protect and improve nature and creating a green economy, in which economic growth and the health of natural resources sustain each other. The White Paper recognises the importance of taking a more integrated approach to the natural environment and the need to work at a landscape scale and provide natural networks and links.

1.5.11 The **England Trees Action Plan 2021 to 2024**[24] follows the 25 Year Environment Plan and sets out the Government's long-term vision for the treescape it wants to see in England by 2050 and beyond. The plan is of relevance to this GI Strategy because it sets out the Government's long-term vision for trees, woodlands and forests in England including the aim to increase woodland cover in England by 12% by 2050. The plan also includes details about how it will support landowners to create new woodlands to benefit nature, promote the green economy, protect and improve existing trees and woodlands, and connect people with trees and woodlands.

1.5.12 As part of the 25 Year Environment Plan's aim to embed a 'net environmental gain' principle for developments, **Biodiversity Net Gain (BNG)** became mandatory from 12th February 2024. BNG has been designed as a way of creating and enhancing nature in the UK. This legal mandate under Schedule 7A of the Town and Country Planning Act 1990[25] ensures that developments in the UK have a measurably positive impact on biodiversity. Developers must deliver at minimum of 10% biodiversity uplift from the original state of the site, either directly on site or elsewhere to compensate for their developments.

1.5.13 Part of this GI Strategy's purpose is to set out how the Council will conserve, enhance, and connect natural and semi-natural green and blue spaces within the Borough to help deliver biodiversity and climate change mitigation/adaption. Of direct relevance to achieving this aim is the **National Pollinator Strategy for England 2014-2024**[26] which 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 food production and the diversity of the environment.

[23] The Natural Choice: securing the value of nature

[24] England Trees Action Plan 2021 to 2024

[25] https://www.legislation.gov.uk/ukpga/2021/30/schedule/14/enacted

[26] The National Pollinator Strategy: for bees and other pollinators in England (2014)

Regional

1.5.14 The **Kent Nature Partnership Biodiversity Strategy 2020 to 2045**[27] aims to deliver, over a 25-year period, the maintenance, restoration, and creation of habitats that are thriving with wildlife and plants, ensuring the county's terrestrial, freshwater, intertidal and marine environments regain and retain good health. The strategy is of importance to this GI Strategy as it identifies priority habitats and species that the whole of Kent can play a significant part in the restoring. The objectives of the strategy also help identify how the GI Strategy can operate at a landscape scale and aid in the protection and enhancement of green and blue spaces across the county rather than just at a Borough level.

1.5.15 The **Kent Environment Strategy (KES, 2016)**[28] is of particular relevance to the formation of this GI Strategy because it sets targets in relation to the quality of the environment and improving biodiversity across the county. These targets will be directly impacted by the implementation of effective green and blue infrastructure. Targets include decreasing the number of days of moderate or higher air pollution and the concentration of pollutants, as well as bringing 60% of Local Wildlife Sites into positive management.

1.5.16 The **Kent Energy and Low Emissions Strategy (2020)**[29] sits within and supports delivery of the KES, providing a framework at the County level for consideration of environment, biodiversity, climate change mitigation and adaptation in the delivery of other co-benefits, including growth and well-being.

1.5.17 The **Kent Downs Area of Outstanding Natural Beauty (AONB) Management Plan 2021-2026**[30] and **The High Weald AONB Management Plan 2019-2024**[31] are statutory plans required by the Countryside and Rights of Way Act 2000. The plans set out the shared vision of the future for National Landscapes (formerly AONB's) and provide both constraints and areas of opportunity when planning for GI at a strategic level. The plans set out specific aims and principles, which seek the positive conservation and enhancement of the Kent Downs and High Weald. Most importantly ensuring that the natural beauty and special character of the landscapes, along with vitality of the communities are recognised, valued, enhanced, and strengthened well into the future.

1.5.18 **Plan Tree (2022)**[32] is Kent County Council's tree establishment strategy covering the period 2022-2032. It sets an ambition for Kent to extend its tree cover by 1.5 million new trees and increase the county's average canopy cover to 19%. The strategy also seeks to improve the condition of existing trees and woodlands by 2032. This plan is designed to provide ecosystem services such as improved soil quality and integrity, improved air quality, reduction in surface water flooding, and urban cooling. It highlights the value of urban trees to provide benefits to peoples mental and physical health, reduce flooding, provide

[27] Kent Nature Partnership Biodiversity Strategy 2020 to 2045

[28] The Kent Environment Strategy (2016)

[29] Kent and Medway Energy and Low Emissions Strategy - Kent County Council (2020)

[30] Kent Downs Area of Outstanding Natural Beauty Management Plan 2021-2026

[31] The High Weald AONB Management Plan 2019-2024 (fourth edition published 2019)

[32] Plan Tree (2022)

habitats and connectivity for wildlife, act as a barrier for noise and air pollution, increase property values, and reduce air temperatures. The document also sets out the principle for tree establishment in Kent and a series of actions which will be taken forward over the strategy period. The principles and actions of Plan Tree can be supported by this GI Strategy through its identification of opportunities to enhance or increase GI spaces and its recommendations for policies to be incorporated in the Local Plan.

1.5.19 In Summer 2023, Kent County Council (KCC) began developing its **Local Nature Recovery Strategy (LNRS)**, branded as **Making Space for Nature in Kent and Medway**[33], in partnership with Local Planning Authorities and other stakeholders. LNRSs are a local approach to the Nature Recovery Strategy outlined in the 25-year Environment Plan, they will be designed to protect and buffer existing designated, high value and priority habitat, setting out priority recovery zones to extend, enhance and connect Kent and Medway's habitat network to aid nature's recovery. Biodiversity Net Gain (BNG) is seen as one of the key investment vehicles to making this happen. The Green Infrastructure Strategy provides an opportunity to identify local priorities and opportunities for Tonbridge and Malling to feed into the development of the LNRS. The LNRS, when in place, will inform the 'strategic significance multiplier' within the Biodiversity Metric[34]. Habitat created or enhanced within areas identified by the LNRS will be set as strategically significant for nature recovery and will generate a higher number of Biodiversity Units compared to in non-strategically significance areas not identified within the LNRS. This is intended to incentivise local habitat creation and enhancement within the identified LNRS areas, providing a key spatial consideration to the investment of BNG payments and form the most impactful areas of BNG investment.

Local

1.5.20 The **Tonbridge and Malling Local Plan** is a strategy document that will provide a positive vision for the future of Tonbridge and Malling Borough[35]. It will include a framework for addressing development needs, environmental and social priorities over the plan period to 2041. On adoption, the Local Plan will form the development plan for the Borough and will be at the heart of the planning decision making process.

1.5.21 As the Borough responds to the need to accommodate new homes and jobs, development can bring certain challenges and opportunities in relation to GI within the area. It is important to understand the location and function of the existing GI assets in the Borough, so impacts of new development can be avoided and/or mitigated as much as possible. It is also important to understand where developments can enhance the existing network through the provision of new green spaces and BNG.

1.5.22 In line with NPPG, this GI Strategy identifies the location of existing GI networks and identifies opportunities to enhance this and recommends appropriate approaches for their protection and enhancement to inform the Local Plan.

[33] Making Space For Nature Kent

[34] Calculate biodiversity value using the biodiversity metric - GOV.UK (www.gov.uk)

[35] Tonbridge and Malling Borough Council Local Plan

1.5.23 The **Tonbridge and Malling Borough Council Corporate Strategy 2023-2027**[36] establishes a set of key priorities including sustaining a Borough which cares for the environment and improving housing options for local people, whilst protecting outdoor areas of importance. The GI Strategy can help to achieve some of the aims of the Corporate Strategy, including increasing biodiversity.

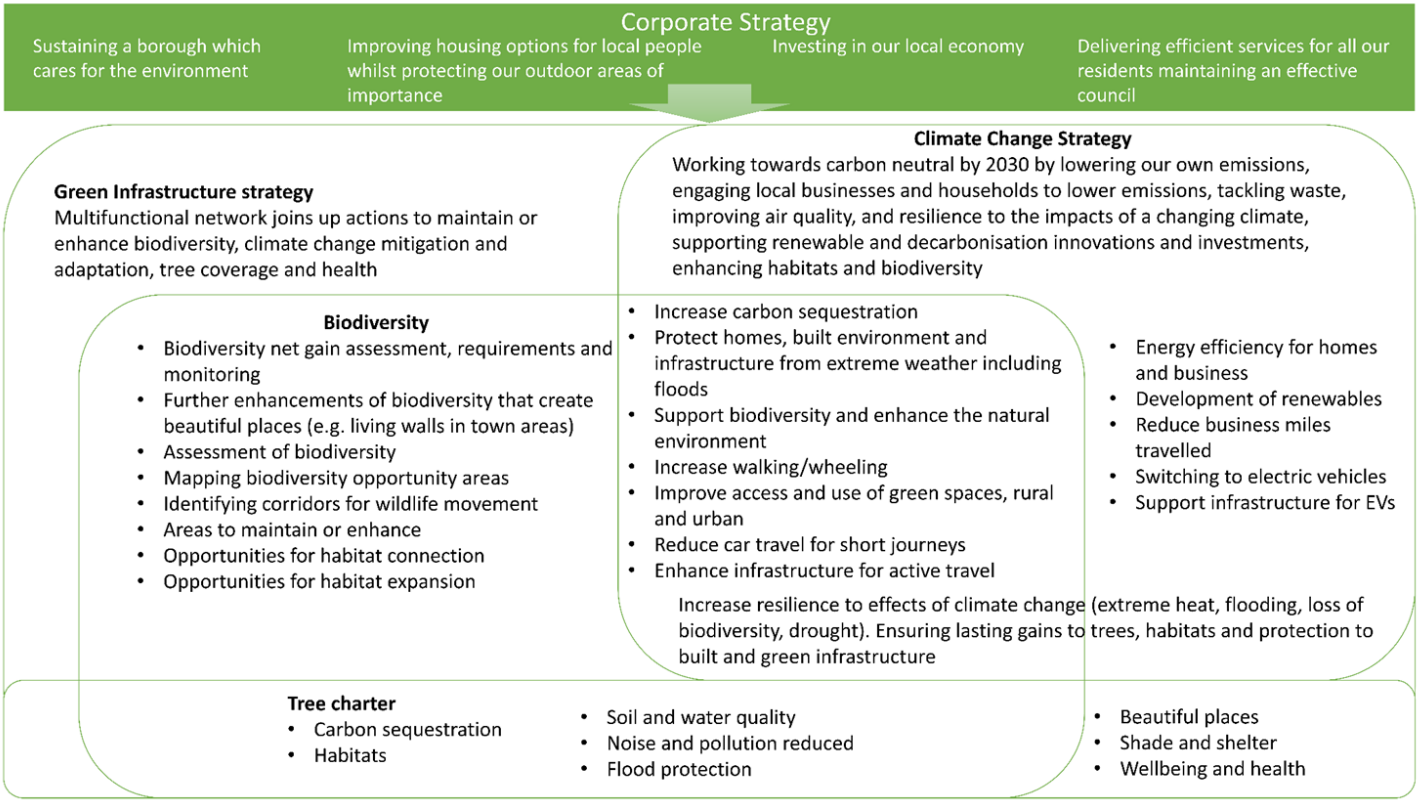
1.5.24 **Tonbridge and Malling Borough Council's Climate Change Strategy 2020 to 2030**[37] sets out a clear aspiration to become carbon neutral by 2030 and includes a commitment to biodiversity protection and enhancement. The Climate Change Strategy also includes objectives such as creating and maintaining buffer zones of mixed vegetation on edges of open spaces and against water areas to create habitats and habitat corridors. The strategy will also work with local landowners and developers to encourage tree planting and explore suitable opportunities for planting within boundaries and hedgerows. The Climate Change Strategy is supported by Tonbridge and Malling's Tree Charter[38]. This GI Strategy can play a role in helping to achieve these aspirations and objectives by identifying key locations for habitat creation, enhancement or protection. Figure 3 shows linkages with TMBC's Corporate Strategy, Climate Change Strategy and this GI Strategy.

[36] Tonbridge and Malling Borough Council Corporate Strategy

[37] Tonbridge and Malling Borough Council Climate Change Strategy 2020 to 2030

[38] Tonbridge and Malling Borough Council Tree Charter

Figure 3. Showing the interdependencies of key TMBC policies.



2 Baseline

2.1 Context and Local Characteristics

2.1.1 The Borough of Tonbridge and Malling is in West Kent, mostly within the outer part of the Metropolitan Green Belt. Much of the north of the Borough is encompassed by the Kent Downs National Landscape[39] (formally AONB), known for its internationally rare chalk grassland habitat and associated species of international conservation importance. Woodland and Lowland Meadow also contribute to a significant biodiversity network protected and valued for its nature conservation interest and potential. A smaller area to the south of Tonbridge lies within the High Weald National Landscape[40] and supports diverse habitats, including ancient woodlands, heathlands, and flower-rich grasslands. Immediately to the east lies the town of Maidstone. Sevenoaks is located some 10km to the west, with Tunbridge Wells to the south, close to Tonbridge.

2.1.2 The Borough supports a range of habitats, which in turn, support a wide range of flora and fauna including both protected and priority species. The diversity of the natural and cultural environment within Tonbridge and Malling is one of the Borough's great assets and many of the existing landscapes and spaces are accessible to the public. But, as the resident population of the Borough grows, access to the existing areas and provision of new ones will need to be managed to ensure high quality, distinct urban and rural landscapes, accessible diverse open spaces, and ecological networks that will allow species to move across the landscape. Together, these assets and their different functions make up a network of GI across the Borough.

2.1.3 The geography, landscape and biodiversity of the Borough is dictated by the underlying geology with alternating bands of hard and soft rock leading to a strong east-west grain to the landscape. This geological sequence is important in determining the character of the landscape and the historic nature of land use, with predominantly agricultural uses on the low-lying areas, historically including orchards and hop growing, and more recently intensive soft fruit farming.

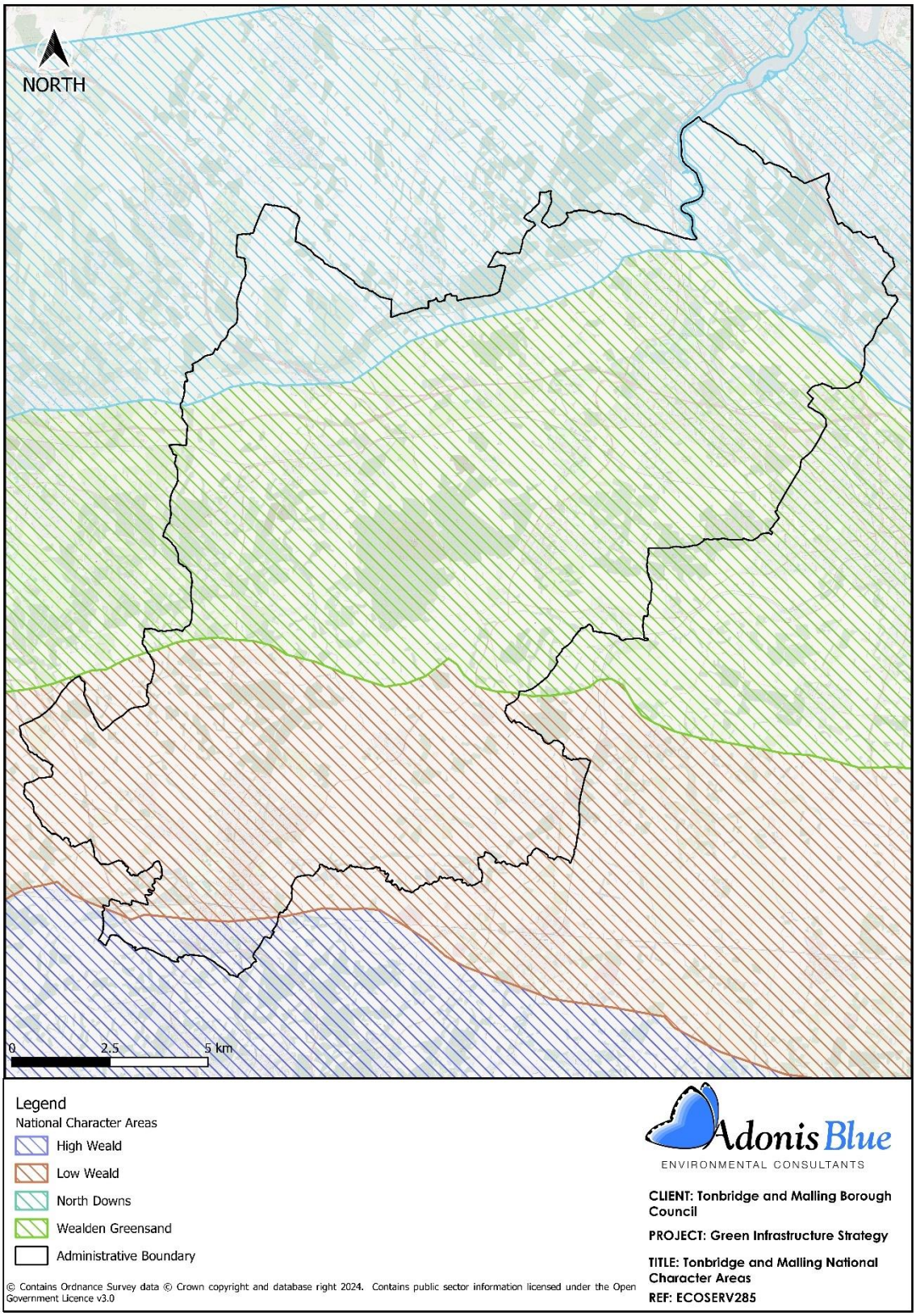
2.1.4 National Character Areas (NCAs shown in Figure 4) were developed by Natural England and identify areas of distinct natural character in the landscape. Each NCA has a unique profile that provides information on its landscape, biodiversity, geodiversity, cultural heritage, and economic activity[41]. Natural England has identified four National Character Areas within the Borough: North Downs, Wealden Greensand, The Low Weald and High Weald. The NCAs provide a framework for influencing biodiversity conservation and enhancement opportunities.

[39] https://kentdowns.org.uk/

[40] https://highweald.org/

[41] National Character Area profiles - GOV.UK (www.gov.uk)

Figure 4. National Character Areas within Tonbridge and Malling.



2.1.5 On the upland areas woodland dominates. Some of these areas of woodland in the north of the Borough have been identified as being of international importance for nature conservation and have been designated as Special Areas of Conservation.

2.1.6 The River Medway, the River Bourne and their tributaries pass through the Borough and have significantly influenced the history and development of the area. An extensive area of the Borough lies in the floodplain of the River Medway. Much of the floodplain is also of significance for biodiversity with extensive areas of the lower Medway Valley being designated as Sites of Special Scientific Interest.

2.2 Baseline assessment

2.2.1 To assess the status of GI in the Borough, a range of open data sources were examined alongside greenspace data supplied by Tonbridge and Malling Borough Council.

Habitats and Land Use

2.2.2 The UK Habitat classification (UKHab)[42] was used to empirically classify the natural and semi-natural features within the administrative boundary. UKHab is a unified and comprehensive approach to classifying habitats which underpins DEFRA's biodiversity net gain (BNG) metric and is set to be the most widely used habitat classification system. Understanding the range of habitats across the Borough allows for a greater understanding of GI resources available and where habitat change could optimise these resources to the benefit of Tonbridge and Malling.

2.2.3 To accurately assess the variety of habitats and features in Tonbridge and Malling Borough, a Habitat Master dataset (created by Kent Wildlife Trust) was used. This dataset uses various open-source habitat data to provide a "best guest" existing habitat. The Habitat Master is compiled from the following datasets:

1. Kent ARCH (Assessing Regional Habitat Change) Survey – 2012 (Kent only) [43]
2. Centre of Ecology and Hydrology Land Cover Map – 2021 [44]
3. Open Mosaic on Previously Developed Land – 2022[45]
4. Ancient Woodland Inventory – 2023[46]
5. National Forest Inventory – 2020[47]
6. Wood Pasture and Parkland – 2021[48]

[42] ukhab – UK Habitat Classification

[43] Default (kent.gov.uk)

[44] UKCEH Land Cover Maps | UK Centre for Ecology & Hydrology

[45] Open Mosaic Habitat (Draft) - data.gov.uk

[46] Ancient Woodland (England) - data.gov.uk

[47] National Forest Inventory - Forest Research

[48] Wood Pasture and Parkland (England) - data.gov.uk

7. Natural England Priority Habitat Inventory – 2023[49]

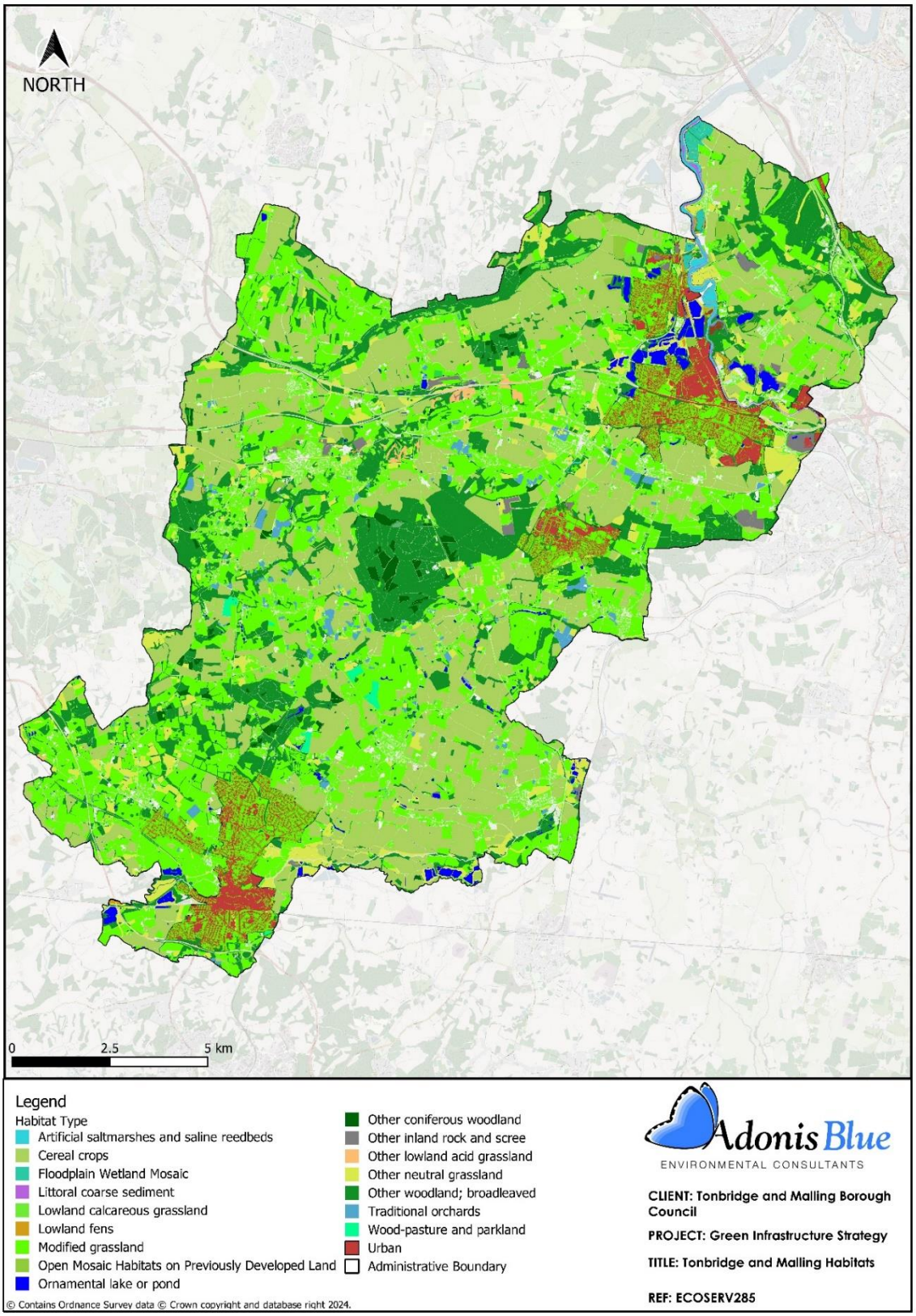
2.2.4 A range of habitat types are found across the Borough. These habitat types can be categorised using the UKHab. As well as being important to understand the ecosystem and biodiversity likely to be present in an area, habitats can also be used to show a profile of land use across the Borough, which can provide valuable information about opportunities for the provision of a wide range of ecosystem services. Of the 24,097 ha of land that make up Tonbridge and Malling, 6,654 ha are considered croplands, and a further 8,175 ha is considered modified grassland, which includes pasture/grazing and urban green spaces. Table 1 and Figure 5 shows the overall split of habitats across Tonbridge and Malling into a level 4 UK Habitat classifications from desk-based information.

Table 1. Breakdown of the main habitats for Tonbridge and Malling using the Habitat Master layer (excluding below 10ha).

UKHab Level 4 Classification	Area (hectares)	Percent Cover across all habitats
Modified grassland	8175	37.42%
Of which is Urban grasslands	*1124*	*5.15%*
Cereal crops	6654	30.46%
Other woodland; broadleaved	4288	19.63%
Other neutral grassland	1192	5.46%
Ornamental lake or pond	315	1.44%
Traditional orchards	235	1.07%
Lowland calcareous grassland	196	0.90%
Other coniferous woodland	191	0.88%
Other inland rock and scree	168	0.77%
Open Mosaic Habitats on Previously Developed Land	164	0.75%
Floodplain Wetland Mosaic	58	0.26%
Wood-pasture and parkland	49	0.22%
Other lowland acid grassland	48	0.22%
Littoral coarse sediment	34	0.16%
Artificial saltmarshes and saline reedbeds	32	0.15%
Lowland fens	27	0.12%

[49] Priority Habitats Inventory (England) - data.gov.uk

Figure 5. Map of general habitats across Tonbridge and Malling.

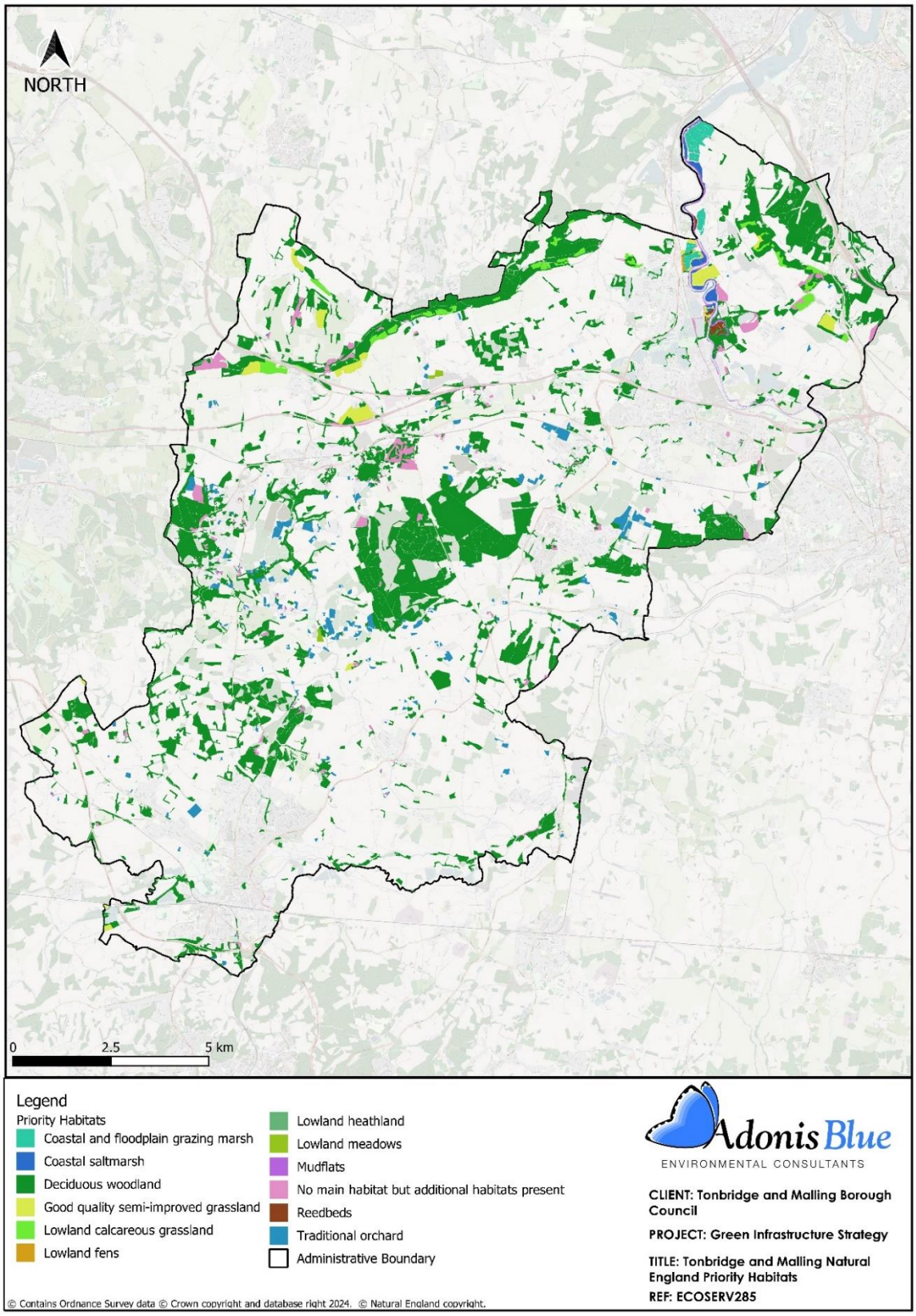


2.2.5 Alongside this list of habitats across the Borough, Natural England provide a dataset of Priority Habitats. This dataset describes the extent and location of 25 priority habitats listed under Natural Environment and Rural Communities Act (2006) Section 41 habitats of principal importance. These are habitats are deemed of great importance to conserving biodiversity. Table 2 and Figure 6 highlight the extent of these within Tonbridge and Malling. This data is taken directly from Natural England's Priority habitat dataset which also includes four habitat classes which are not priority habitats, but which hold potential importance for conservation of biodiversity in England. Where evidence indicates the presence of unmapped or fragmented priority habitats, these are attributed as additional habitats present. When compared to the Habitat Master above, the Priority Habitat dataset should be considered more accurate for priority habitats. As always, ground surveys should be used to provide absolute certainty of habitats.

Table 2. Breakdown of Priority Habitats in Tonbridge and Malling.

Natural England Priority Habitats	Area (hectares)	Percent Cover across Priority Habitats Only
Deciduous woodland	3606	81.29%
Traditional orchard	228	5.14%
No main habitat but additional habitats present	214	4.83%
Good quality semi-improved grassland	127	2.87%
Lowland calcareous grassland	107	2.40%
Coastal and floodplain grazing marsh	62	1.41%
Coastal saltmarsh	35	0.78%
Mudflats	29	0.66%
Reedbeds	12	0.27%
Lowland meadows	9	0.20%
Lowland heathland	4	0.10%
Lowland fens	3	0.06%

Figure 6. Map showing priority habitats in Tonbridge and Malling.



Nature Conservation Designations

2.2.6 There are many areas across the Borough that carry statutory designations (Figure 7) based on their value as part of the national GI and biodiversity network. Habitats are designated by government bodies[50] for conservation based on their scarcity, biodiversity, and importance for threatened species. Areas with nature related designations and priority habitats, for example, ancient woodland and chalk grassland, protect the key biodiversity and viability of ecosystems within the Borough. Designated sites not only seek to protect species and habitats but also provide valuable spaces for connection with the natural environment for local communities.

2.2.7 The key European designations are Special Protection Areas (SPA), RAMSAR and Special Areas of Conservation (SAC). Out of these, only SAC are present in Tonbridge and Malling. SAC is defined in the European Union's Habitats Directive (92/43/EEC)[51]. These exist to protect 220 habitats and approximately 1,000 species which are of European interest following criteria given in the directive. There are three SAC within the Borough which are all within the northeast corner.

2.2.8 Under UK designation there are several types of Nationally protected sites: National Landscapes (formerly Areas of Outstanding Natural Beauty), Sites of Special Scientific Interest (SSSI), National Nature Reserves (NNRs) and Local Nature Reserves (LNR). Within the Borough, the Kent Downs National Landscape stretches across the northern and western regions and a smaller area to the south of Tonbridge lies within the High Weald National Landscape. There are 11 SSSI sites, and one LNR. National Landscapes[52] are protected for their landscape and heritage features, whereas SSSI and LNR are designated additionally for wildlife.

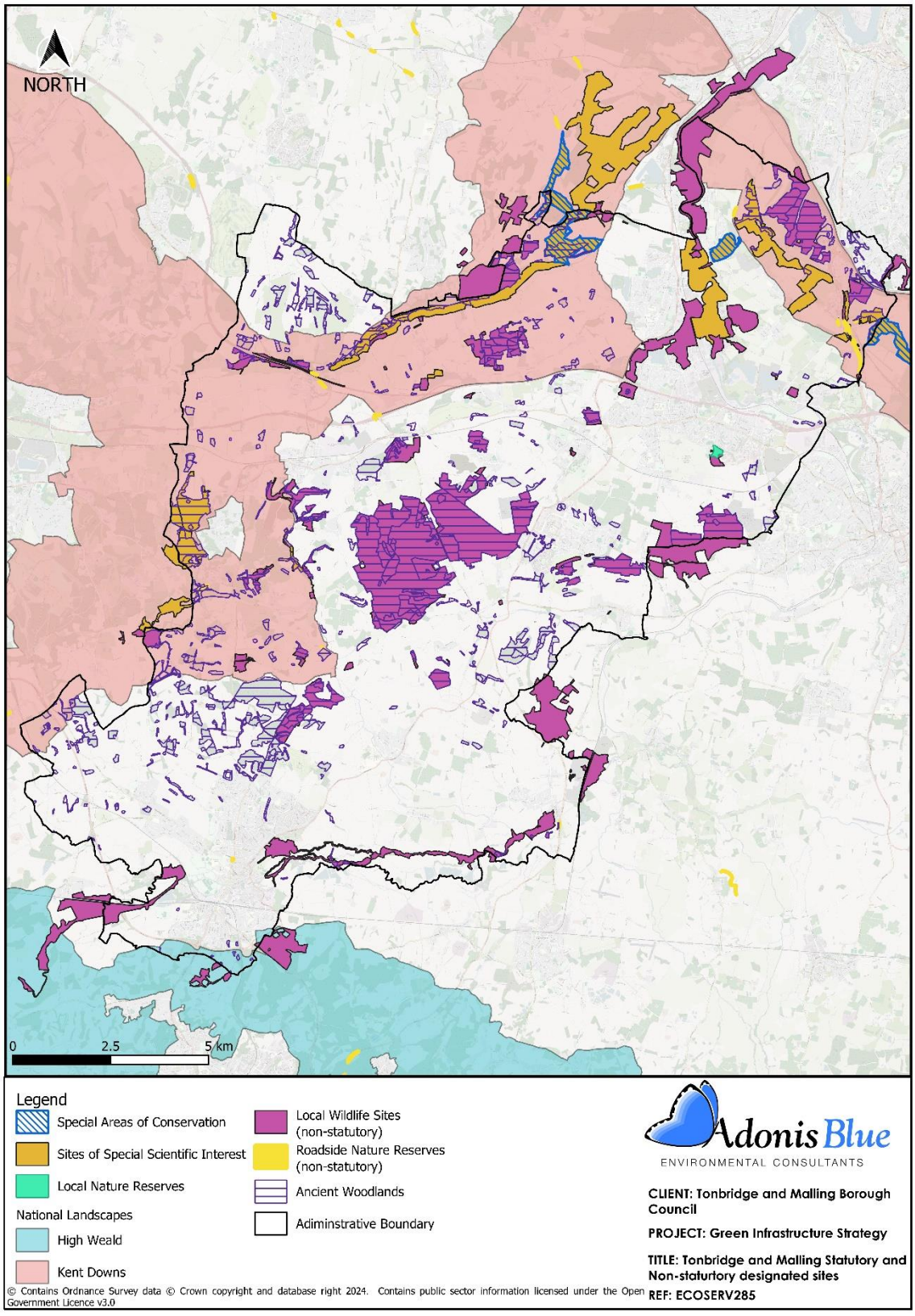
2.2.9 Although not a statutory designation, the Borough also has 46 Local Wildlife Sites (LWS) which are of county wildlife importance for wildlife, the largest of which is Mereworth Woods (East and West) making up nearly 900 ha of the combined total of 2,296 ha occurring within the administrative boundary.

[50] Protected sites and areas: how to review planning applications - GOV.UK (www.gov.uk)

[51] Special Areas of Conservation (jncc.gov.uk)

[52] Landscapes review (National Parks and AONBs): government response - GOV.UK (www.gov.uk)

Figure 7. Map of statutory and non-statutory designated sites in and around Tonbridge and Malling, including Ancient Woodlands.

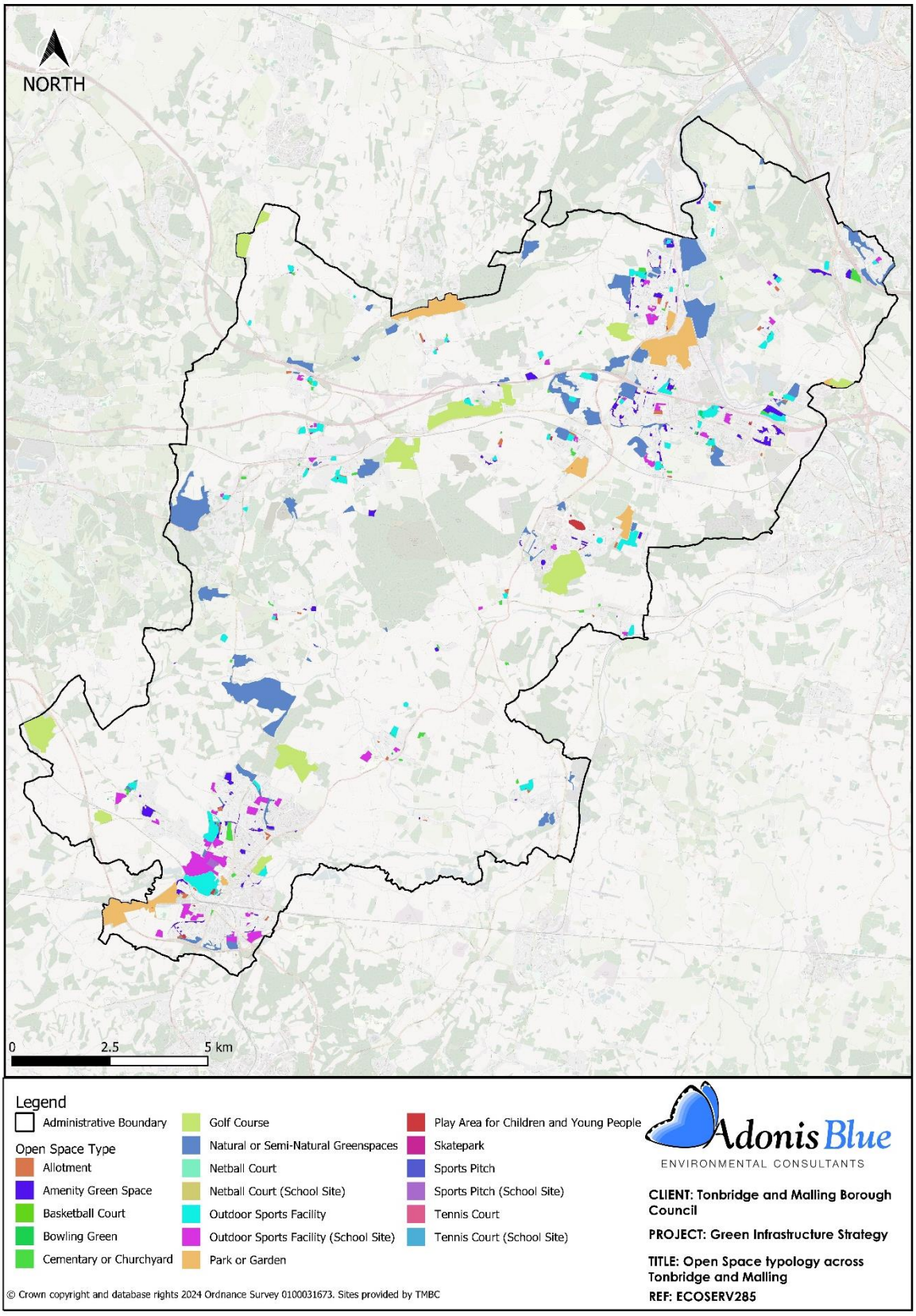


Open Spaces

2.2.10 Open spaces in Tonbridge and Malling are currently identified in policy annex OS1A and OS1B of the Managing Development and the Environment DPD (2010). These are currently being reviewed as part of the evidence base for the Local Plan. Figure 8 illustrates the distribution and typology of these sites. The typology was taken from the companion guide to Planning Practice Guidance[53]. The spaces shown perform a range of functions for the community, biodiversity, and climate change mitigation. These include sports and recreation, spaces for nature, food production and religious grounds. Identifying these sites helps to quantify the greenspace accessible by members of the community for recreation, health, and well-being; those spaces best suited to maintain and expand the biodiversity networks present in the Borough; and sites that would be suitable for enhancing ecosystem services.

[53] Planning practice guidance - GOV.UK (www.gov.uk)

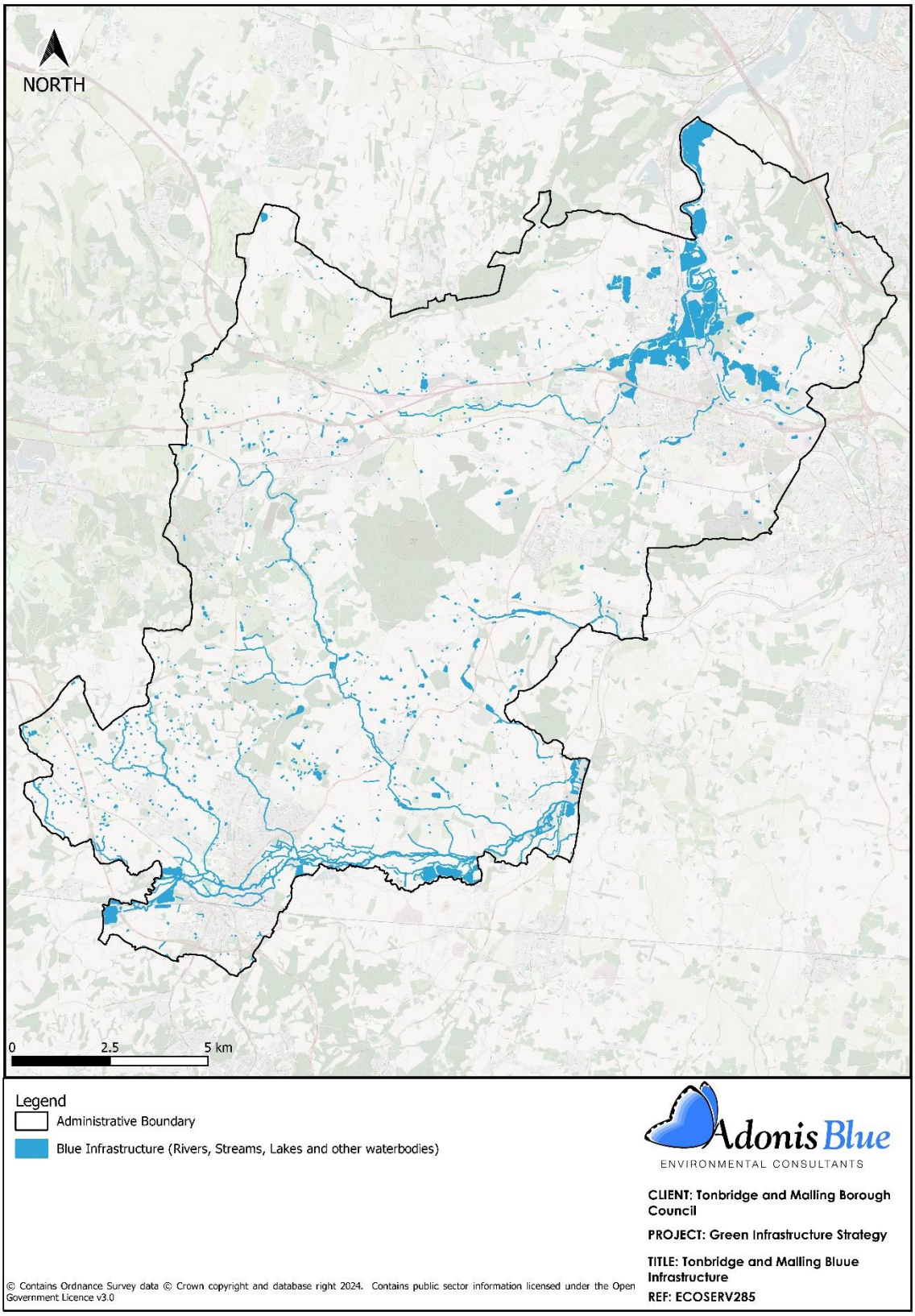
Figure 8. Open spaces map by type.



Blue Infrastructure

2.2.11 Blue Infrastructure (BI) encompasses areas of surface water across the Borough. These areas provide myriad functions from transport and freshwater provision to biodiversity and sports and recreation. When appropriately managed, they can also provide increased connectivity between habitats and greenspaces. The blue spaces of Tonbridge and Malling make up 572 ha (Figure 9). This includes rivers, lakes, ponds, salt marshes and other wet-lying habitats. The main rivers within the Borough are the River Medway, River Bourne and tributaries including the Wateringbury, East Malling, Haden, Pen, Coult, Alder, Snodland Streams and the Hilden Brook. There are also several former large gravel pits in Tonbridge and Malling Borough that have been transformed into lakes, including Haysden Country Park and Leybourne Lakes Country Park.

Figure 9. Map of blue infrastructure across Tonbridge and Malling.



Tree Canopy Cover

2.2.12 Trees are an important part of GI, and climate change mitigation and adaptation. Tree Canopy Cover describes the area covered by a tree or shrub when viewed from above, including the leaves, branches, and stem. Canopy cover is a two-dimensional metric, which can be used to quantify the spread of tree cover across an area. Assessing the spatial extent of a district and establishing a baseline dataset is an important step in the management of our natural environment. It can assist planners, policy makers, foresters, and communities to recognise the benefits provided by trees and their importance in planning, sustainability, and resilience. Kent County Council's Tree Study[54] estimates tree canopy cover in Kent's Districts, using BlueSky data and the i-Tree analysis and assessment tool[55]. Estimates of canopy cover for each district and each ward (KCC assessments are based on the 2013 ward boundaries) have been calculated (see Figure 10). These results provide a snapshot of current tree canopy cover and a baseline for comparison with future surveys.

2.2.13 The Kent County Tree Study indicates tree cover in Tonbridge and Malling Borough to be 28%, higher than the UK average of 13%, but below the EU average of 37%. The Government's independent climate change advisory body, the Committee on Climate Change[56], has suggested that tree cover in the UK will likely need to be increased to 19% by 2050 to reach its net zero emissions targets. The Woodland Trust supports this target[57] and emphasises that to increase tree cover, the UK needs to pursue a mix of approaches which must include expanding native woodland, sustainable commercial plantations, agroforestry, urban trees, hedges, and individual countryside trees.

2.2.14 As a Borough, overall tree cover is currently greater than the target 19%. However, there are some wards which are identified as having less than 19% tree cover, and additional tree planting could be targeted here to ensure every ward has tree cover greater than 19%.

[54] Tree Canopy Cover Report - Kent County Council (2020)

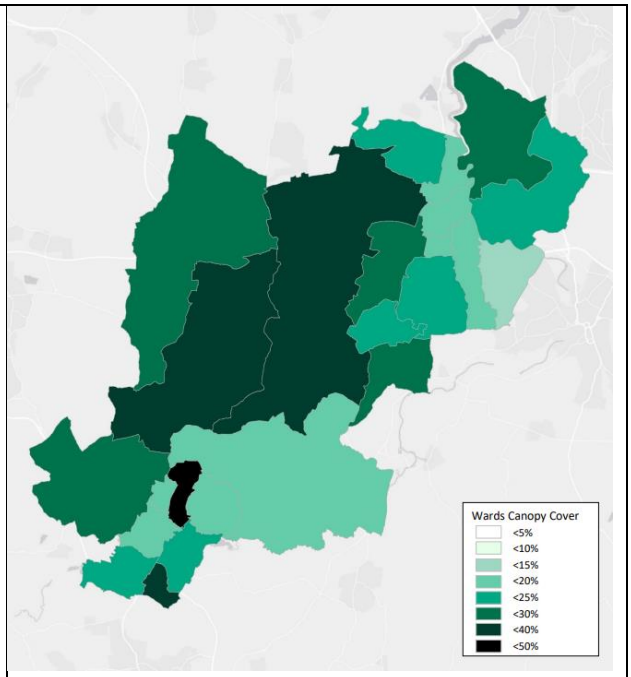
[55] What is i-Tree? (itreetools.org)

[56] Climate Change Committee (theccc.org.uk)

[57] Woodland cover targets Detailed evidence report.pdf (defra.gov.uk)

Figure 10. Percentage tree canopy cover by ward (from Kent County Council's Tree Study).

Ward	% Canopy Coverage
Aylesford North and Walderslade	24.7%
Aylesford South	14.8%
Borough Green and Long Mill	38.8%
Burham and Wouldham	26.0%
Cage Green	40.3%
Castle	18.8%
Ditton	19.1%
Downs and Mereworth	34.9%
East Malling	21.9%
Hadlow and East Peckham	18.9%
Higham	16.2%
Hildenborough	27.6%
Judd	22.7%
Kings Hill	20.6%
Larkfield North	19.0%
Larkfield South	15.2%
Medway	20.0%
Snodland East and Ham Hill	17.6%
Snodland West and Holborough Lakes	24.8%
Trench	17.5%
Vauxhall	30.5%
Wateringbury	28.8%
West Malling and Leybourne	28.3%
Wrotham, Ightham and Stansted	28.7%
Average	**28%**



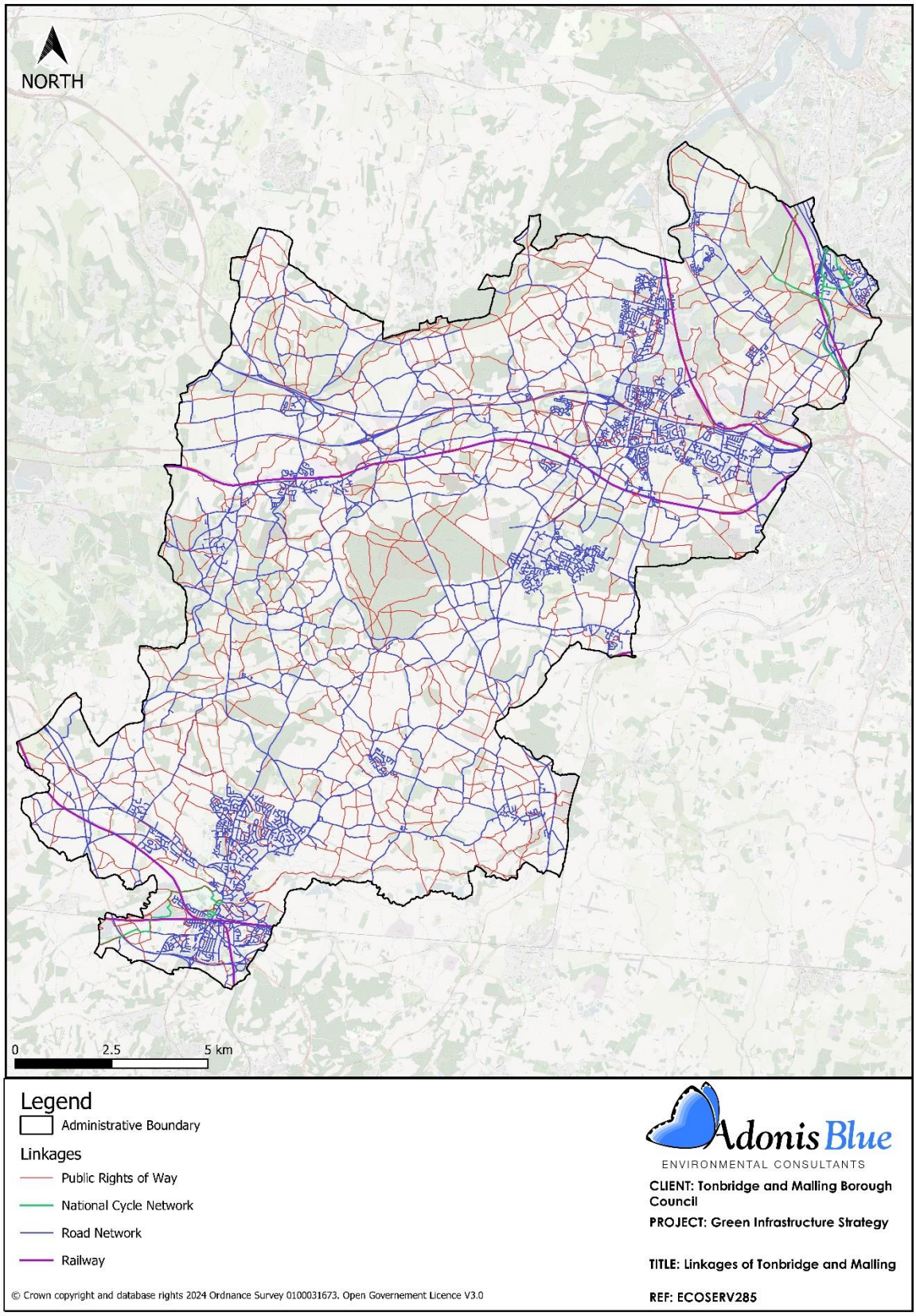
Access Linkages

2.2.15 Footpaths, cycle routes, railways and roads allow for enhanced access to greenspaces. Well-planned routes that are designed and managed with nature in mind can also double as important wildlife corridors, so can form a component of the Borough's GI network (Figure 11).

2.2.16 Kent County Council (KCC) manages public rights of way in Kent, including footpaths, bridleways and byways serving various purposes and are open to different user groups, and which facilitate access to nature. KCC has developed a Rights of Way Improvement Plan (ROWIP)[58] to enhance the public rights of way network over the next decade.

[58] Rights-of-Way-Improvement-Plan-2018-2028.pdf (kent.gov.uk)

Figure 11. Map showing access linkages.



Ecological Networks

2.2.17 Interconnectedness of natural green and blue spaces through corridors are paramount for the movement of biodiversity. These corridors help maintain diversity within each larger space, creating healthy and resilient ecosystems. At present, these networks are identified by the Kent Biodiversity Opportunity Areas (BOAs) which represent a targeted landscape scale approach to conserving biodiversity. There are four BOAs within the borough: Central North Downs[59], Greensand Heath and Commons[60], Medway and Low Weald Grassland and Wetland[61], and Medway Gap & North Kent Downs[62]. The emerging Local Nature Recovery Strategy (LNRS)[63] and Nature Recovery Network (NRN)[64] will replace the BOAs once adopted and identify priorities for these areas.

2.2.18 A key element in ecological networks are linear features of habitat within urban and sub-urban settings known as Blue-green corridors. Blue-green corridors are small, interconnected pieces of habitats such as road verges, hedgerows, ditches, and rail lines. For example, the rail network across the UK has 32,000km of green corridors across their rail line verges[65]. This provides a linear network of grassland, scrub, and woods across most of the UK which are unsuitable for development and managed by the rail companies to maintain the lines.

Linkages and Corridors

2.2.19 Although the primary function of Access Linkages is to facilitate the movement of people, they also provide space for wildlife to migrate across the country. The loss of connectivity between green spaces in urban environments is widely thought to be behind the decline of many species such as hedgehogs[66]. Similarly, Roadside Nature Reserves which can support rare and important flowering species help connect the landscape, spreading seed sources across to other sites, whilst providing a corridor of food for pollinators and safe passage for reptiles, amphibians, and small mammals. They also provide a picturesque relief to road users along motorways and A roads.

2.2.20 Blue-green corridors connect the landscape within Tonbridge and Malling but also connect Tonbridge and Malling with neighbouring local authorities. Working with neighbours to develop a joined-up approach to enhance and support blue-green corridors will support cross border connections for wildlife. The Greensands way for example covers a 108 mile route across Surrey and Kent and the Wealdway which stretches from the Thames Estuary to the English Channel, both of which pass through Tonbridge and Malling. Figure 12 shows

[59] Central North Downs BOA citation

[60] Greensand Heaths and Commons BOA citation

[61] Medway and Low Weald Wetlands and Grasslands BOA citation

[62] Medway Gap and North Kent Downs BOA citation

[63] Local nature recovery strategies - GOV.UK (www.gov.uk)

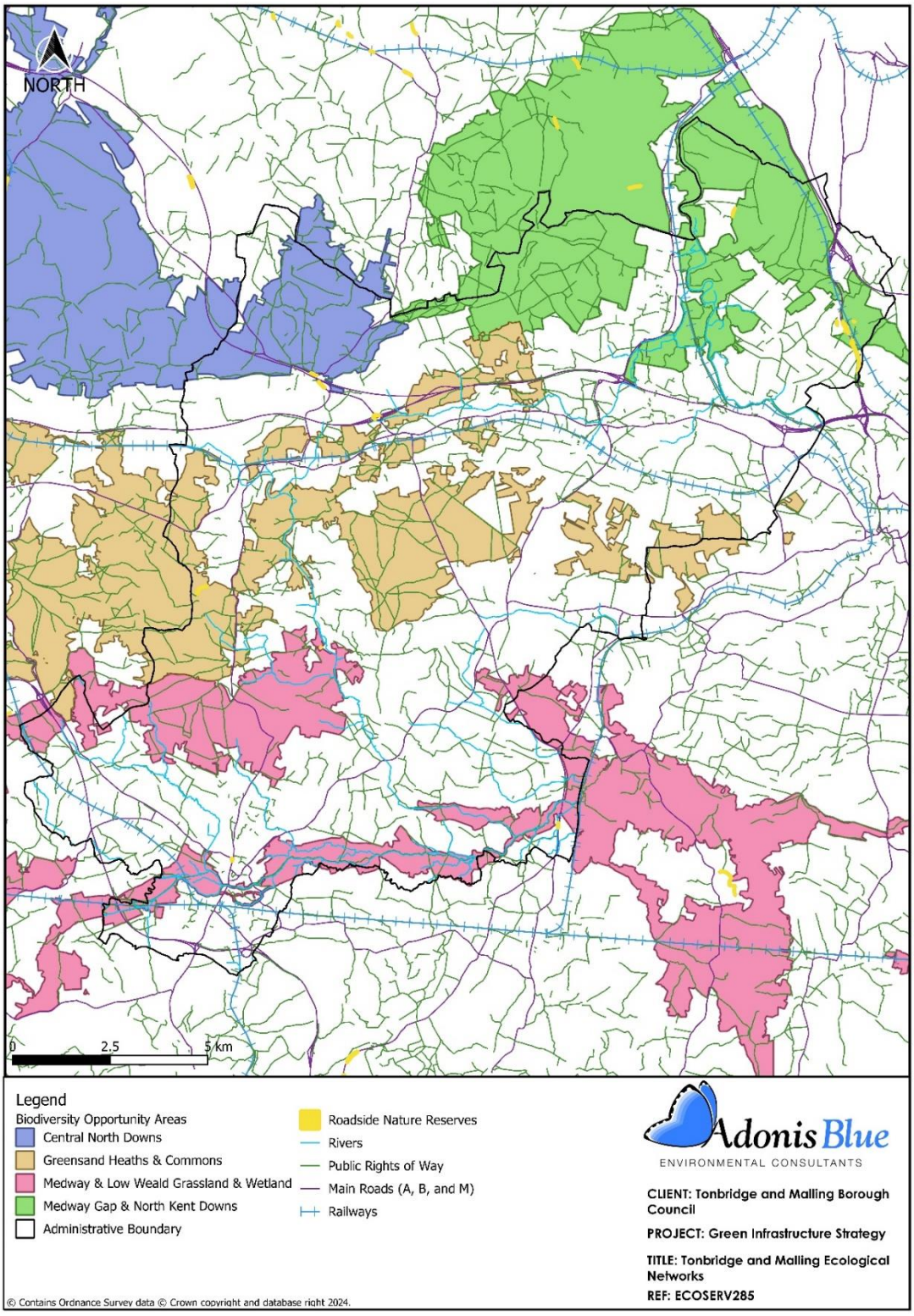
[64] The Nature Recovery Network - GOV.UK (www.gov.uk)

[65] Greener transport network to provide highways for wildlife - GOV.UK (www.gov.uk)

[66] Hedgehog-Street-HEMP-guide.pdf (britishhedgehogs.org.uk)

how the connectivity of roads, rail, and PRoW link together the BOAs covering Tonbridge and Malling and neighbouring local authorities. Whilst the location of existing roadside nature reserves highlights that there are many more opportunities to expand this network.

Figure 12. Ecological networks and access linkages within Tonbridge and Malling and neighbouring areas.



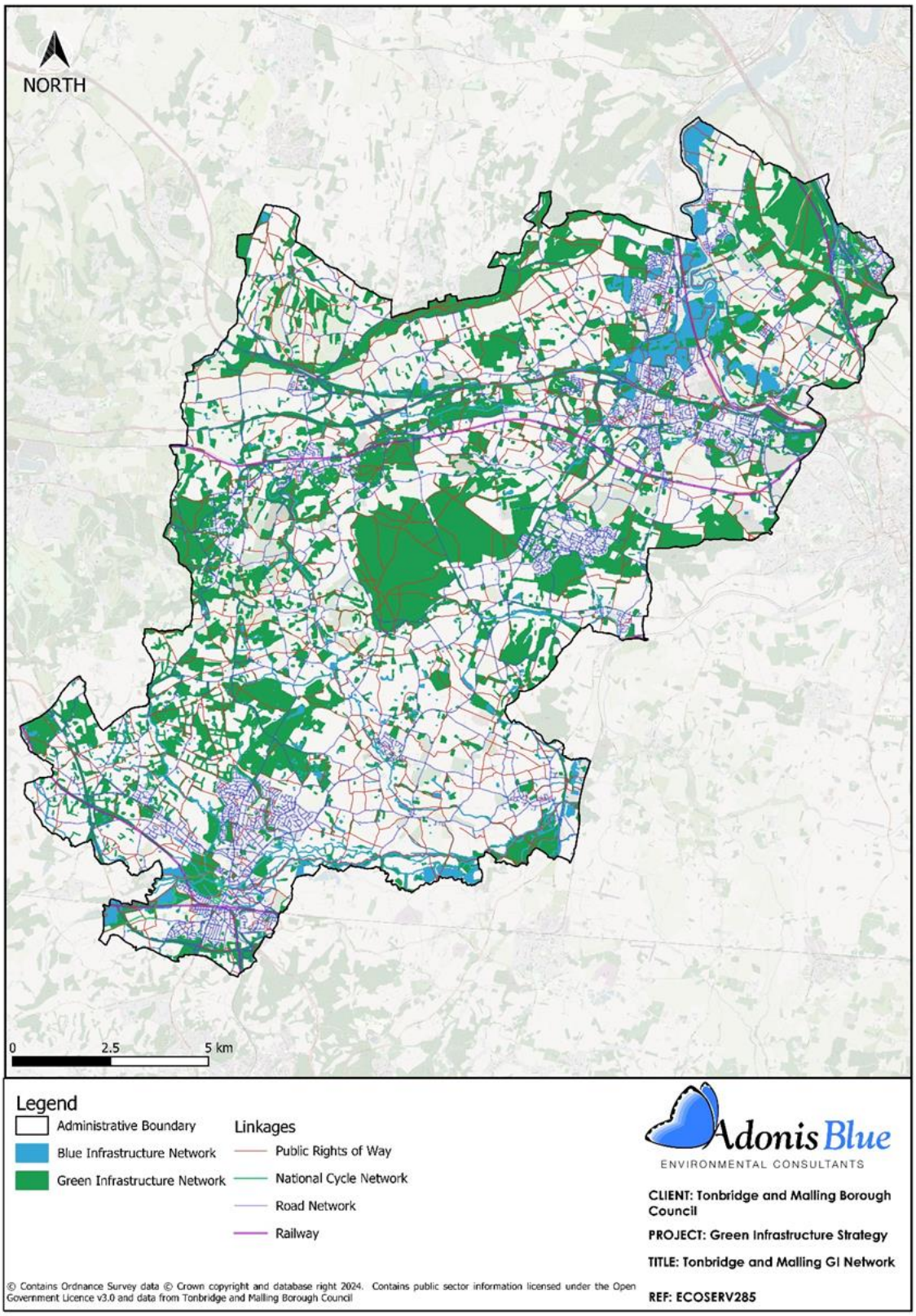
GI network: summary

2.2.21 Overall, land within Tonbridge and Malling is primarily agricultural land (most of which is assumed to be grazing pasture). However, there are wildlife-rich habitats, present throughout allowing both residents and visitors to experience an array of habitats from coastal saltmarsh to woodlands and heathlands.

2.2.22 The open green spaces and rivers and lakes, form a patch work of green and blue natural spaces providing recreation spaces, as well as spaces for nature, food production, flood mitigation and many other services. These are linked across the Borough and accessible are by the various linkages of PRoW, cycle networks and roads. Together these form a GI network across the Borough.

2.2.23 Combined, the trees and habitats are crucial in the delivery of ecosystem services and natural benefits provided by this network. Figure 13 identifies Tonbridge and Malling's GI Network.

Figure 13. Map of GI network.



3 Access to Green Space

3.1 Access to a variety of GI can make a significant positive impact on the health and well-being of residents. To evaluate the provision of accessible greenspace across Tonbridge and Malling, and help to identify any deficiencies in provision, a mapping exercise has been undertaken using the Natural England ANGSt GI Framework (Table 3).

Table 3. Size and proximity criteria for accessible natural green spaces from Natural England's GI framework.

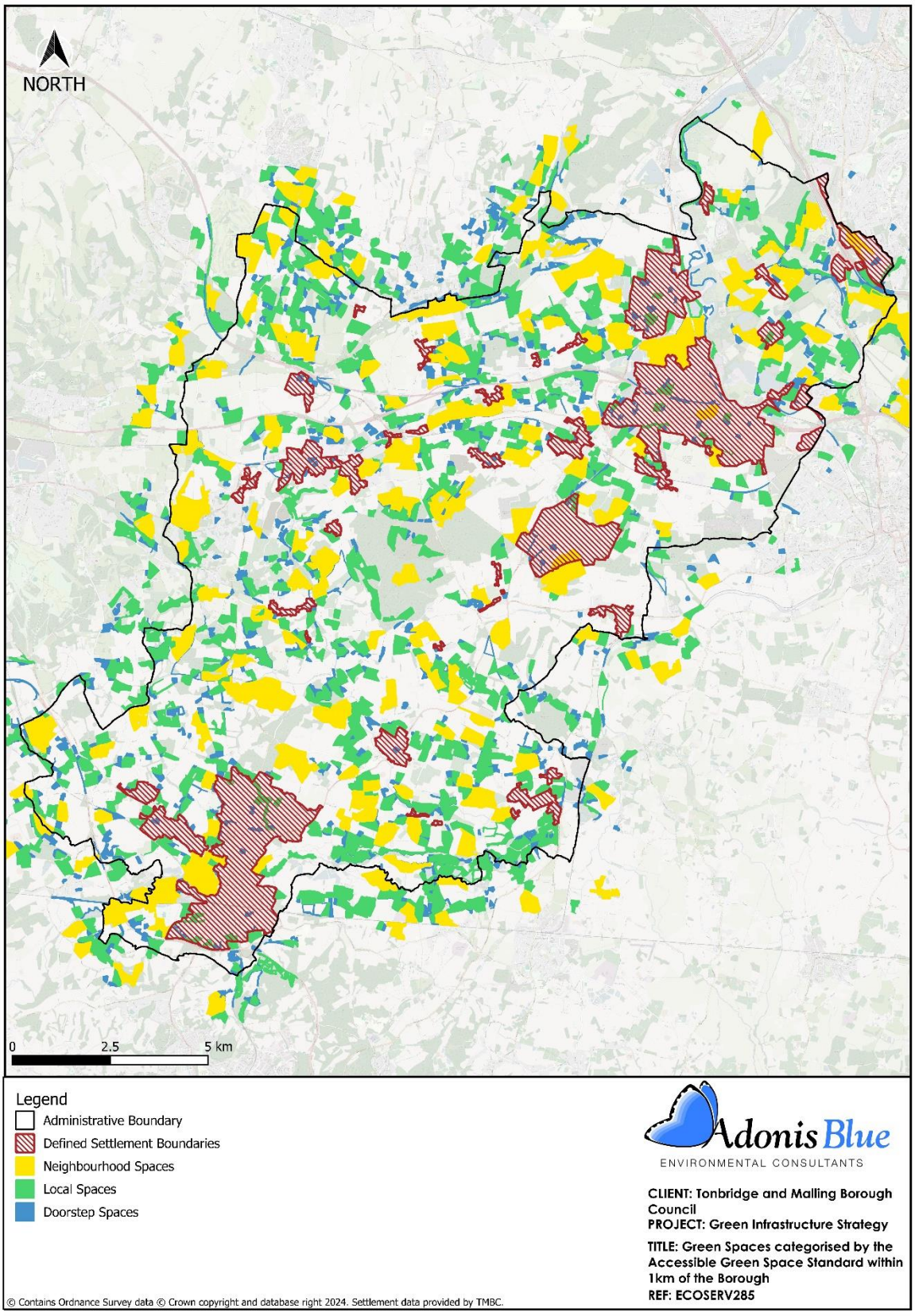
Accessible Greenspace Standard – Size and Proximity criteria				
As a priority - within a 15-minute walk, all people should have access to:				
Natural greenspace type (all must be publicly accessible except for Doorstep)		**Minimum area**	**Maximum distance**	**Approximate travel time**
EITHER	Doorstep	0.5 ha	200 m	<5 mins walk
	Local	2 ha	300 m	5 mins walk
AND	Neighbourhood	10 ha	1 km	15 mins walk
Beyond a 15-minute walk, all people should also have access to ALL of the following:				
Wider Neighbourhood		20 ha	2 km	35 mins walk
District		100 ha	5 km	15-20 mins cycle
Subregional		500 ha	10 km	30-40 mins cycle

3.2 The Natural England framework advises that every postcode in the UK should be either 200m from a greenspace of 0.5ha or larger (a doorstep scale greenspace), or 300m from an accessible greenspace of 2ha or larger (a local scale greenspace). In addition to this, every postcode should also be within 1km of an accessible greenspace of 10ha or larger (a neighbourhood scale greenspace).

3.3 Provision within Tonbridge and Malling was examined in relation to this standard. To do this, it was necessary to identify all the accessible green spaces in the Borough. This is distinct from the green infrastructure network shown in Figure 13 as it excludes green infrastructure types that are not accessible to the public. Therefore, an accessible green space was defined as any of the above assets identified in Figure 13 that contains or intersects with a public right of way (PRoW) or defined as accessible within the Open Spaces dataset provided by TMBC. To account for accessible greenspace outside Tonbridge and Malling that may be accessed by residents of the Borough, spaces up to 1km (the maximum distance within a 15-minute walk according to the standard set out in Table 3) outside of the Borough boundary, as well as spaces within the Borough itself, were included in the analysis. These spaces and habitats were categorised by size into:

- Doorstep – above 0.5 Ha.
- Local – above 2 Ha that was at least accessible by PRoW.
- Neighbourhood – above 10 Ha that was at least accessible by PRoW.

Figure 14. Publicly accessible natural green spaces categorised by ANGSt.



3.4 The maximum distances for each relevant natural green space type (as set out in Table 3) (200m, 300m, and 1km respectively) were then applied. Areas of the Borough were then classified by coverage as:

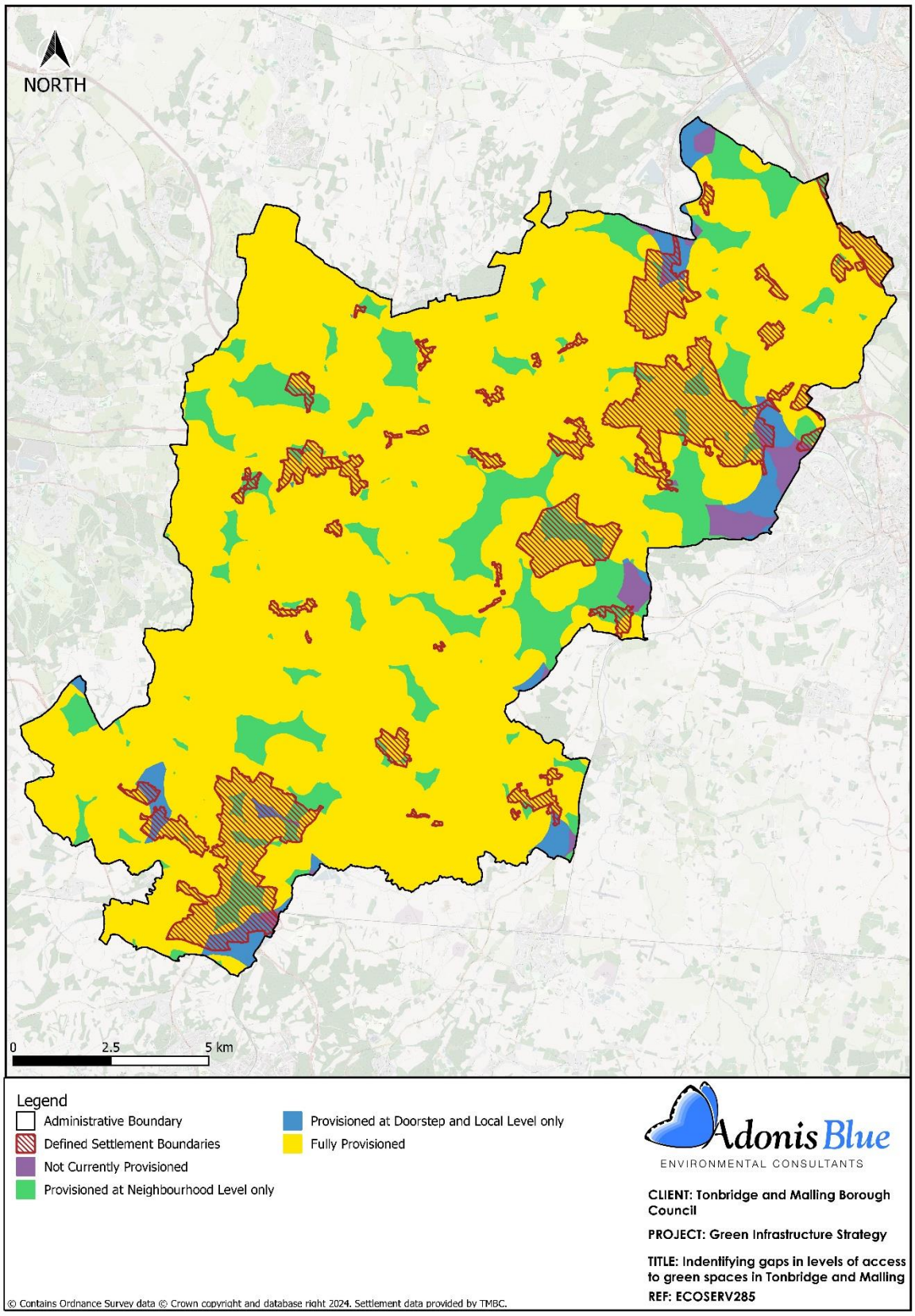
- Not currently provisioned at the doorstep, local or neighbourhood level.
- Provisioned with a doorstep OR local level only.
- Provisioned with a neighbourhood level only.
- Fully provisioned with a doorstep OR local level AND a neighbourhood level.

3.5 Settlement boundaries (as defined in the Core Strategy 2007[67]) were then overlayed to identify areas of the Borough that fulfilled the above criteria.

3.6 The results of the Accessible Natural Greenspace Standard (ANGSt) mapping are outlined below (Figure 15).

[67] Core strategy (tmbc.gov.uk)

Figure 15. ANGSt Assessment of gaps in provisions for people.



3.7 Figure 15 identifies that not all parts of the Borough are fully provisioned. The priority in these areas should be to create new or expand existing sites close to settlements.

3.8 There are a few areas where there is no provision of greenspace at the doorstep or local levels and at the neighbourhood level (areas in purple). These areas should be prioritised for the creation of greenspace sites and the expansion of existing sites where possible. Further consideration is given to these locations below.

Holborough and north Snodland

3.9 While Snodland, in large part, is fully provisioned with greenspace according to the standard, some areas in the north and much of the Holborough area would benefit significantly from the creation of an accessible greenspace of 10ha or larger within a radius of 1km. There is an area around Covey Hall Road that falls into the "not currently provisioned" category and should therefore be seen as a priority for greenspace creation, enhancement, and expansion.

Ditton

3.10 There is an area in the east of Ditton which falls into the "not currently provisioned" category and should therefore be considered a priority for greenspace creation. Regions to the north and south of this area could also benefit from the creation of an accessible neighbourhood greenspace. Some of the central areas could benefit from doorstep or local greenspace creation, however, much of this settlement is "fully provisioned."

Wateringbury

3.11 Much of the north of Wateringbury would benefit from the creation of new spaces or the expansion of existing spaces at the doorstep or local level and there is a small residential area in the northeast that falls into the "not currently provisioned" category and should therefore be prioritised for space creation. The south of the settlement, however, is fully provisioned.

Tonbridge

3.12 Tonbridge is well provisioned in many areas. However, some of the central areas could benefit from the creation or expansion of greenspaces to the doorstep or local level and there is an area in the central north of the town, and another in the far south, that could benefit from provision with greenspace at the neighbourhood level. A small area in the southeast and a strip of land in the north of the town fall into the "not currently provisioned" category and should therefore be prioritised for greenspace creation and/or expansion.

4 Assessment of GI potential across Open Spaces

4.1 Ecosystems services assessment

4.1.1 GI is defined by the capacity of green and blue spaces in delivering a range of ecosystem services across environmental, economic, health and well-being. However, sites differ in their capacity to provide different services, and their locations may also determine the local needs of each site. Some sites are better placed to provide environmental benefits such as flood prevention whereas others might provide well-being and recreation but have limited natural benefit.

4.1.2 This overview provides an example of how open space can be prioritised for different services. Data can help provide an overview of a site's potential and give indications on which ecosystem services should be prioritised for each site. Ultimately, sites need to be individually assessed for their capacity to provide against various services. For the purposes of this report the following data has been considered to assess this potential. A site is considered to have potential if it falls within these layers. These datasets are listed in more detail in Appendix 2.

4.1.3 For site capacity to perform for nature areas within:

- Biodiversity Opportunity Areas
- Buglife B-Lines

4.1.4 For site capacity to perform for natural flood management and water provisioning areas within:

- Environment Agency Flood Zones

4.1.5 For site capacity to perform for people, health, and well-being areas within:

- DEFRA Air Quality and Pollution

4.2 Potential of Ecosystem Services focuses

4.2.1 Of the 503 sites identified as open spaces within Tonbridge and Malling (Figure 8):

- 117 sites fall within BOA's and 174 fall within B-Lines, with just over half of all sites falling in one or both. These sites have good potential to provide for wildlife and nature connectivity.
- 106 sites fall within EA Flood Zones suggesting they have potential for flood management and water provisioning if managed to promote the movement of water. This might look like creating ponds, connecting grasslands to flood zones to provide spaces for water in periods of heavy rain away from settlements.
- Five sites are within air quality management areas due to high levels of nitrogen oxides and particulate matter, these are primarily near A roads. These sites have potential to provide buffers to air pollutants depending on their habitat cover, trees and shrubs generally provide better air filtration than grasslands.

4.2.2 These datasets are shown in Figures 16 and 17 against the open spaces of Tonbridge and Malling.

Figure 16. Open spaces of Tonbridge and Malling overlayed against Air Quality Management Areas and EA Flood Zones.

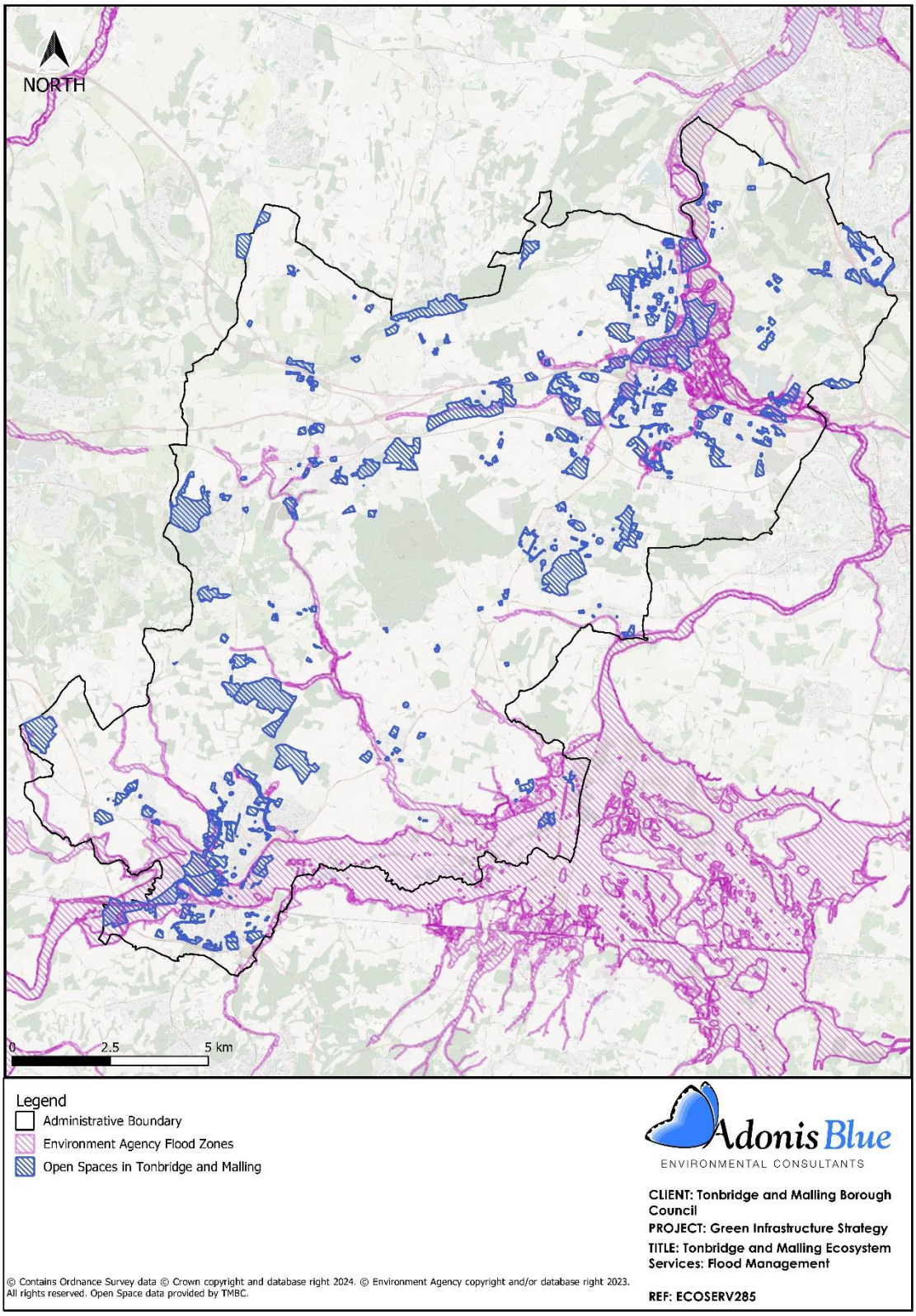
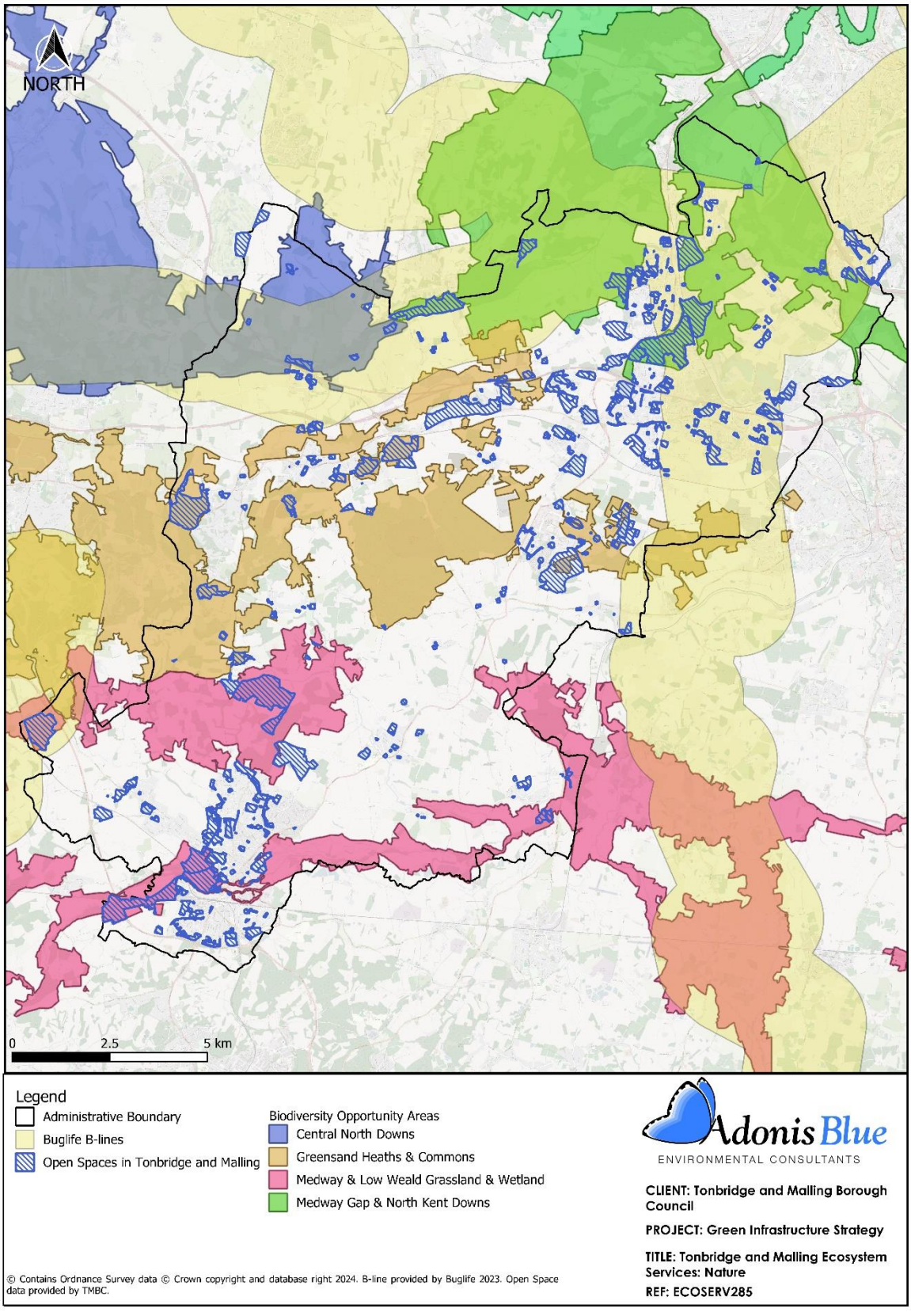


Figure 17. Open spaces of Tonbridge and Malling overlayed against BOAs and B-lines.



4.3 Conclusion

4.3.1 Using these large-scale datasets as a first step for assessing potential allows for sites to be classified into groupings based on their capacity to deliver and provided ecosystem services. This informs what green or blue infrastructure is best developed within those sites. For example, areas within the flood zone are more likely to experience water related issues. Therefore, open spaces within the flood zone can be utilised, managed, and designed to mitigate those issues. Similarly, sites within the B-lines could be managed more effectively for pollinators and wildlife generally.

4.3.2 Looking at Figures 16 and 17 it is possible to see that many sites within the flood zone in the north do not fall within BOA's or B-lines. Therefore, this can direct the management of those sites more appropriately to natural flood management. Using these datasets helps to shortlist sites, inform further surveys, management plans, and GI interventions.

5 Risk and opportunities for GI in the Borough

5.1 Introduction

5.1.1 This section looks to provide wider context to the opportunities of GI against several areas within Tonbridge and Malling. It provides an overview of two broad areas that GI is designed to help and mitigate, these are: Biodiversity and Climate Change, and Health and Well-being. The context for these areas is based on national and, where available, local information. This is followed by an outline of the Strengths, Challenges, and Opportunities for Tonbridge and Malling over the Local Plan period to 2041.

5.2 Biodiversity and climate change

5.2.1 One of the biggest challenges facing people and wildlife is climate change. Based on the Met Office's UK Climate Projections (UKCP) [68] for the south-east, by 2080:

- summers are likely to be hotter by around 5°C to 6°C.
- winters are likely to be warmer by around 3°C to 4°C.
- summer rainfall is likely to decrease by 30% to 50%.
- winter rainfall is likely to increase by 20% to 30%.

5.2.2 In addition, KCC's Kent Spatial Risk Assessment for Water[69] predicts that the majority of Tonbridge and Malling Borough will have either "high" or "medium" increased frequency of hydrological drought up to 2050. Hydrological drought occurs as a result of periods of precipitation shortfall which affects river flow and reservoir storage; the risk of hydrological drought is exacerbated by increased abstraction resulting from population growth.

5.2.3 A study published by the Met Office in October 2023, which modelled the probability of unprecedented weather events occurring in the UK under likely future climate scenarios, found that even under a 2°C increase in global temperature (which is likely to be exceeded by 2030), the projected increase in frequency or severity (or both) will be stronger for hot weather, droughts, and flooding in the UK. 30% of summer months will see unprecedented mean high temperatures compared to 1965-2022 weather data, with 14% expected to exhibit unprecedented low rainfall. This highlights the potential impact of climate change on extreme weather events in the region.

5.2.4 It is therefore important that Tonbridge and Malling Borough is resilient to the effects of climate change in order to lessen the adverse impacts and intensity of extreme weather event such as flooding and droughts, which are projected to worsen during the next few decades. GI can help to tackle climate change through both adaption and mitigation.

5.2.5 Adaptation refers to the process of adjusting to the current and future effects of climate change. It involves anticipating the adverse effects of climate change and taking appropriate action to prevent or minimize the damage they can cause, or taking advantage

[68] UK climate - Met Office

[69] Kent's changing climate - Kent County Council

of opportunities that may arise. Adaptation measures include infrastructure changes, such as building flood water storage facilities adjacent to rivers, such as the Leigh Expansion and Hildenborough Embankment Scheme, in order to slow water release in more extreme flood events and reduce the adverse impacts on settlements.

5.2.6 Mitigation refers to human interventions that reduce greenhouse gas emissions and/or enhance the sinks, thereby mitigating the extent of global temperature rise and climate change impacts. An example would be tree planting to aid carbon sequestration and storage; however, this would only be recommended following suitable site selection and to ensure that any planting does not cause more damage than it benefits e.g. avoiding planting on existing areas of valued wildlife habitat such as acid grassland or species-rich chalk grassland.

5.2.7 There are many opportunities to integrate climate change mitigation and adaptation objectives into the Local Plan. Examples of adaptions and mitigation to aid planning for wetter, warmer winters and hotter, drier summers and opportunities building from the baseline and RAG process for TMBC priority sites are indicated in sections 5.2.5 and 5.2.6.

5.2.8 GI can help to tackle climate change through both adaption and mitigation. Climate change is already having significant impacts, showing existing infrastructure to be outdated and not capable of dealing with more extreme weather events. Therefore, any GI strategy must consider the future predicted effects of climate change, which are likely to be more extreme than that which has been experienced so far. A strong GI strategy helps future-proof infrastructure for both people and wildlife, allowing society to cope with climate change. It can also be used to slow and reverse the impacts of climate change, through tree planting for example, which will not only store carbon, but will help to stabilise land helping to prevent landslides during extreme flood events.

5.2.9 Approximately 10% of the Borough is Ancient Woodland (Figure 7), a priority habitat supporting valuable flora and fauna, locally moderating extremes of heat and cold and providing an amenity function for quiet recreation. With such an asset there should be the provision to review woodland structural diversity, age class composition and species to provide an assessment of climate resilience. This may be achieved through condition assessments such as England Woodlands Biodiversity Group Woodland Condition Assessment[70] and the Forestry Commission Climate Matching Tool[71]. Management of these woodlands would generally be the responsibility of the landowner.

5.2.10 Urban trees are one of the most important tools in GI networks, providing a variety of core ecosystem services at relatively low cost. Street trees can improve the aesthetic value of built-up areas, and their presence can improve mental well-being and sense of place for residents, while promoting physical activity by making streets more enjoyable places to walk or exercise.

5.2.11 During heatwaves, unshaded roads and pavements can reach temperatures in excess of 50°C, causing damage to roads themselves and making them unsafe for dogs, cats and wildlife, to walk on, while radiating heat back into the air, contributing to an “urban heat

[70] Woodland Wildlife Toolkit (sylva.org.uk)

[71] Climate Matching Tool - Forest Research

island" effect that poses a public health risk to pedestrians. Street trees can provide important shade and cooling to pedestrians, cars, and buildings, reducing land surface temperatures by up to 10°C on hot days[72]. Street trees benefit wildlife by providing permanent habitats and nest sites to resident wildlife, serving as corridors to allow wildlife to move between larger woodland habitats, and acting as important rest stops for migratory birds.

5.2.12 The baseline information indicates that tree health could be an issue, therefore any fragmented pieces of woodland ideally need to be connected to each other to help increase diversity of seed sources and movement of wildlife. Habitat fragmentation is a key casual factor leading to the decline for many species that do not travel far such as hazel dormouse (the Kent State of Wildlife[73] report lists the hazel dormouse as 1 of 8 mammals in Kent 'of major conservation concern') and many butterflies. There is a misconception that green corridors need to be large, they can be as simple as hedgerows or street trees to bridge woodlands together for wildlife. Haysden Country Park, identified as a priority site, has fragments of woodland habitat, with several other woodland sites between it and Poult Wood Golf Course (another priority site). These two priority sites could be connected through planting of hedgerows and woodland strips, using other woodland sites as 'stepping stones.' Looking at opportunities to enhance existing urban green spaces to create corridors between larger sites or to use new development to create new green corridors could be built to increase GI provision. The model of Kent Wildlife's Roadside Nature Reserves is an excellent example of this. Road verges are unusable areas of land for anything major but linear stretches of wildflower meadows can be haven for pollinators and facilitate their movement through the landscape to bigger pockets of habitat. An example of this is the verge along the A229 at Bluebell Hill, which is in the Borough, noted for its orchids and is so valuable it has been designated as a Local Wildlife Site.

5.2.13 Since trees typically live for decades, if not centuries, it is important to understand the long-term environmental conditions they will be likely to have to tolerate to ensure planting will be sustainable. Native species should be chosen where possible, as these have evolved to thrive with native wildlife and are a part of the area's cultural identity and heritage. However, if it becomes more likely that drought events for longer than a month will be commonplace, then non-invasive species that can provide suitable sources of food and shelter for native fauna should be considered. The Tree Species Guide for Infrastructure[74] is a useful tool which advises on choosing tree species with the appropriate properties for different purposes and environmental conditions.

5.2.14 In terms of tree planting within the Borough, it should be noted that tree planting will have limited benefits in the short term since larger more mature trees with wider canopies and deeper root systems provide the most benefits. Therefore, when planting street trees, TMBC should make sure to choose the right tree for the right place and ensure that species chosen will be able to thrive in the environmental conditions facing Tonbridge and Malling within the next century. Climate scenario modelling predicts that summers will be hotter

[72] (PDF) The street tree effect and driver safety (researchgate.net)

[73] State of Nature in Kent 2021 (kentnature.org.uk)

[74] Tree Species Selection for Green Infrastructure - Trees and Design Action Group (tdag.org.uk)

and drier, while winters will be warmer and wetter, with a higher chance of extreme weather events like storms and droughts; it is important to choose species that will be likely to tolerate such conditions. Species should be chosen and placed appropriately according to their function. For example, drought-tolerant species will be able to survive the hotter, drier summers but may be more sensitive to inundation and not suitable for locations subject to flooding in heavy rain events. Trees can also help to mitigate the impact of flooding and agricultural surface water runoff. A recent UK study found that a single tree pit within a 9 x 9m asphalt plot reduced surface water runoff by 62%[75].

5.2.15 Additional planting of lines of flood-tolerant trees or hedgerows bordering sites adjacent to the flood prone River Medway such as Haysden Country Park, Tonbridge Farm, Swanmead and Tonbridge Racecourse Sportsgrounds could reduce surface water runoff, reducing flood risk in rural communities while protecting rivers from the detrimental ecological effects of nutrient runoff.

5.3 Health and well-being

5.3.1 One of the priorities identified in TMBC's Corporate Strategy[76] is to 'Promote well-being and help people, especially our most vulnerable residents, to live healthy and active lifestyles. This includes provision of good quality leisure facilities and services across Tonbridge and Malling.' TMBC's existing GI is currently well placed to contribute to this aim.

5.3.2 Development pressure in the Borough to meet identified needs for housing and employment, may place pressure on existing green spaces. Therefore, there is a need to consider cost-effective high-impact development solutions that deliver multiple benefits. Well-designed GI will be an important tool in achieving this and offers opportunities to mitigate and manage impacts on communities and nature[77].

5.3.3 The health and well-being of our communities is at risk nationally, with the NHS under increasing strain from an ageing population, obesity, and a burgeoning mental health crisis[78]. Greenspace, such as parks, woodland, fields 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 well-being. This 'natural capital' can help local authorities address local issues that they face, including improving health and well-being, managing health and social care costs, reducing health inequalities, improving social cohesion and taking positive action to address climate change[79].

5.3.4 This aligns with The Kent Nature Partnership Biodiversity Strategy[80] objective: "Connecting people with the natural environment: by 2045 the widest possible range of ages and

[75] The effect of street trees and amenity grass on urban surface water runoff in Manchester, UK – ScienceDirect

[76] TMBC Corporate Strategy 2023-2027

[77] IJERPH | Free Full-Text | Green Space Quality and Health: A Systematic Review (mdpi.com)

[78] Charity Age UK, 'Fixing the Foundations' (2023)

[79] Public Health England Improving Access to Green Space (2020)

[80] Kent-Biodiversity-Strategy-2020.pdf (kentnature.org.uk)

backgrounds will be benefiting from the mental and physical health benefits of the natural environment; and we will have inspired the next generation to take on guardianship of the county's biodiversity."

5.3.5 In 2021 The Office for National Statistics figures indicated that 50.7% of Tonbridge and Malling residents described their health as "very good", increasing from 48.0% in 2011[81].

5.3.6 However, the Kent Public Health Observatory provides a comprehensive overview of health and well-being in Tonbridge and Malling Borough. The Living Well: Overview - Living well in Tonbridge & Malling report[82] highlights that there are inequalities in health outcomes by deprivation, with higher rates of premature deaths and long-term conditions in more deprived areas.

5.3.7 The English Indices of Deprivation 2019[83] is the most recent statistical release on relative deprivation in small areas in England. The term 'small areas' refers to geographical units known as Lower-layer Super Output Areas (LSOAs). These LSOAs are used to measure relative deprivation across England. Each LSOA typically covers a relatively small geographic area and contains a population of around 1,500 people on average. The report provides detailed information on the deprivation scores of different areas in England, including local authority districts. The local deprivation profile for Tonbridge and Malling is shown at Figure 18 using the 2019 open-source data from the Ministry of Housing, Communities and Local Government[84]. No areas of Tonbridge and Malling are in decile 1, which is most deprived. This is shown against open spaces within Tonbridge and Malling, with 334 open spaces (over half) falling within deprivation areas in index 7 or above.

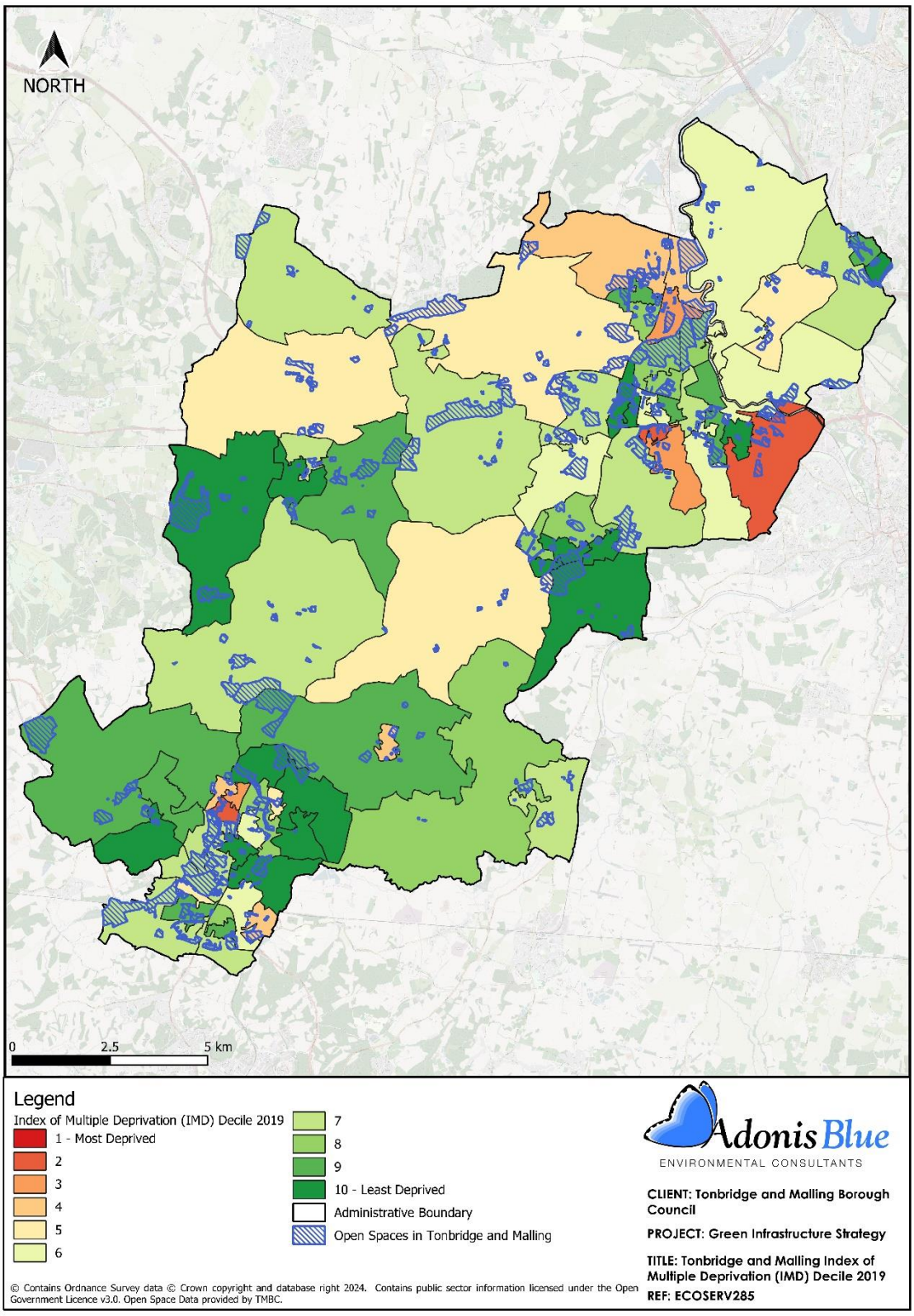
[81] How life has changed in Tonbridge and Malling: Census 2021 (ons.gov.uk)

[82] Living Well: Overview (2018 - kpho.org.uk)

[83] English indices of deprivation 2019 - GOV.UK (www.gov.uk)

[84] Ministry of Housing, Communities and Local Government (arcgis.com)

Figure 18. Tonbridge and Malling local deprivation profile overlayed with Open Spaces in Tonbridge and Malling (based on pre 2023 ward boundaries).



5.3.8 To restore more equitable access to greenspace across the Borough, TMBC could prioritise creating and improving the quality of, and access to, public greenspaces in the most deprived areas of the Borough, as shown in the English Indices of Deprivation 2019 map. This includes, but is not limited to Snodland, Aylesford and Ditton, Trench Wood, and Higham Wood settlement areas. Snodland is partly provisioned by Leybourne Country Lakes, and Trench and Higham Wood settlements are provisioned by a cluster of TMBC owned green spaces which could be suitable for enhanced health living and health walks programmes to encourage use of the green spaces. In Aylesford and Ditton there is very little TMBC owned land, so opportunities to promote use of green spaces under other ownership or the potential to provide more green space linked to new development proposals could be explored.

5.3.9 TMBC is well provided for with Haysden and Leybourne Lakes Country parks located close to higher density areas of the Borough providing facilities for active physical activity as well as places for more relaxed well-being benefits that greenspaces provide. There are good connecting corridors suitable for walking and cycling from the centre of Tonbridge through to Haysden Country Park. Health walks are organised through the One You Programme[85] in Tonbridge and Malling and offer a great way for residents to discover, reconnect and appreciate the natural world. Additionally, the Living Well Programme[86] provides information and advice about health and well-being in Tonbridge and Malling Borough which could be a vehicle to promote the health and well-being of TMBC owned green spaces.

5.4 Strengths, challenges and opportunities analysis

5.4.1 Table 4 identifies the strengths, challenges, and opportunities in the Borough.

[85] Improve your health with One You – Tonbridge and Malling Borough Council (tmbc.gov.uk)

[86] Living Well Overview (kpho.org.uk)

Table 4. Strengths, challenges and opportunities for green infrastructure in Tonbridge and Malling

Strengths	Challenges	Opportunities
• TMBC is well provided for with high quality biodiversity sites, including: - 3SACs - 11 SSSI sites, with 723 ha of these falling within the administrative boundary. - 46 Local Wildlife Sites within the administrative boundary, totalling 2,296 ha with the largest being Mereworth Woods (nearly 900 ha)	• Balancing the growth agenda against protecting and enhancing the natural environment. • The need to reverse habitat fragmentation of existing habitats and biodiversity loss. • Balancing the potential multifunctional role of GI with nature conservation functions. • Ensuring the right habitat in the right location to maximize benefits for biodiversity. • There is an increasing need to review and balance traditional approaches recommending classic native tree species to ensure long-term tree stock longevity, climate resilience and appropriate biodiversity benefits. • Increased risk of invasive species and exotic infectious diseases. • Potential for development of brownfield sites to have a negative impact on biodiversity if re-naturalisation has occurred.	• New development can increase the supply of well-designed GI through new provision. Onsite and offsite BNG create the opportunity to deliver appropriate habitat creation incorporating a natural regeneration approach with the benefits of multiple essential ecosystem services. • Review woodland structural diversity, age class composition and species to provide an assessment of climate resilience. • Use GI to protect, buffer, connect and enhance biodiversity over the widest possible area and take action for priority habitats and species e.g. at Pen Stream managing vegetation to enhance connectivity with the ancient semi-natural woodlands Frog Bridge Wood and Higham Wood. • Maintain and enhance woodland habitat and enhance ground flora, especially ancient woodland indicator species, at Holly Hill Wood.
• The Borough includes National Character Areas (NCAs) as the Kent Downs and High Weald National Landscapes known for their internationally rare chalk grassland habitat and woodland	• Large scale GI needs to be sympathetic to the existing landscape character and appropriate to the area's geology and biodiversity.	• Increase knowledge and understanding of local residents, business and landowners of the nature and climate emergency, encouraging protection of priority species and habitats and positive action. • Build a dialogue with farmers to influence agriculture interests about the benefits of GI on land they own.
• The River Medway, the River Bourne and their tributaries pass through the Borough. Much of the Medway floodplain is of significance for biodiversity with extensive areas of the lower Medway Valley being designated as Sites of Special Scientific Interest.	• Key challenge is storage and use of rainwater from wetter winters during drier, hotter summers. • More sealed surfaces can increase surface water run-off and add to the urban heat island effect and carbon emissions. • Challenge in devising SuDS schemes that satisfy the requirements of the Highway Authority, Sewerage Authority, Planning Authority, and the developer, particularly with respect to the long-term maintenance of the scheme. • Increased importance of small pockets of blue infrastructure e.g. for wildlife,	• GI provides an opportunity to adapt to and mitigate climate change effects, for example using swales and rain gardens to manage water run-off and through street trees to help mitigate urban heating. • Increase the use of nature-based solutions and co-benefits especially on the larger sites and those adjacent to the River Medway, planting more trees on areas prone to flooding without intruding upon amenity/sports grounds to slow down and retain water, mitigating flood risk, managing peak water flow and harvesting rainwater to ensure the establishment and survival of

Strengths	Challenges	Opportunities
	e.g. birds, within towns, residential and other built-up areas.	planting, and contributing wider wildlife benefits.
• The Borough has a number of large public open spaces including Haysden Country Park, Leybourne Lakes, Holly Hill Wood, Tonbridge Racecourse, Frog Bridge Sportsground, Swanmead Sportsground, Tonbridge Farm Sportsground, all with good access to settlements.	• General funding climate can make it difficult to secure capital and revenue funding to implement recommendations.	• There are opportunities to design and develop multi-use areas e.g. allotments, community orchards, planting fruit trees as street trees and using herb plants in borders, with benefits for pollinator species, which also provide shade for families enjoying picnics and quiet recreation and manage the urban heat island effect.
• The Kent County Tree Study indicated tree cover in Tonbridge and Malling Borough is 28%, higher than the UK average of 13%.	• Ensuring that high integrity principles following natural processes for restoration of habitat can be validated, verified and monitored by organisations with high integrity standards and verified by accepted practices and monitored against accepted high integrity standards.	• Whilst TMBC is already above the target level of 19% tree canopy cover, those wards falling below the target 19% could be identified as opportunity areas for action. The ward boundaries should not constrain consideration of locations for enhancing tree planting to support and enhance multi-functional GI and benefits.
• Good general accessibility provision with much of the Borough meeting the size and proximity criteria of the Accessible Natural Greenspace Standards.	• There are some areas of settlement which are provisioned at the neighbourhood level, doorstep or local level only. • Very few areas have no provision of greenspace at the doorstep or local levels and at the neighbourhood level. • Ensuring that existing and new communities have access to and are aware of GI.	• Areas where there is no provision of greenspace at the doorstep or local levels and at the neighbourhood level should be prioritised for the creation of greenspace sites and the expansion of existing sites where possible. • Working with the Parishes through their Parish Infrastructure Statements to identify local GI deficiencies and actions that could be undertaken by Parishes.

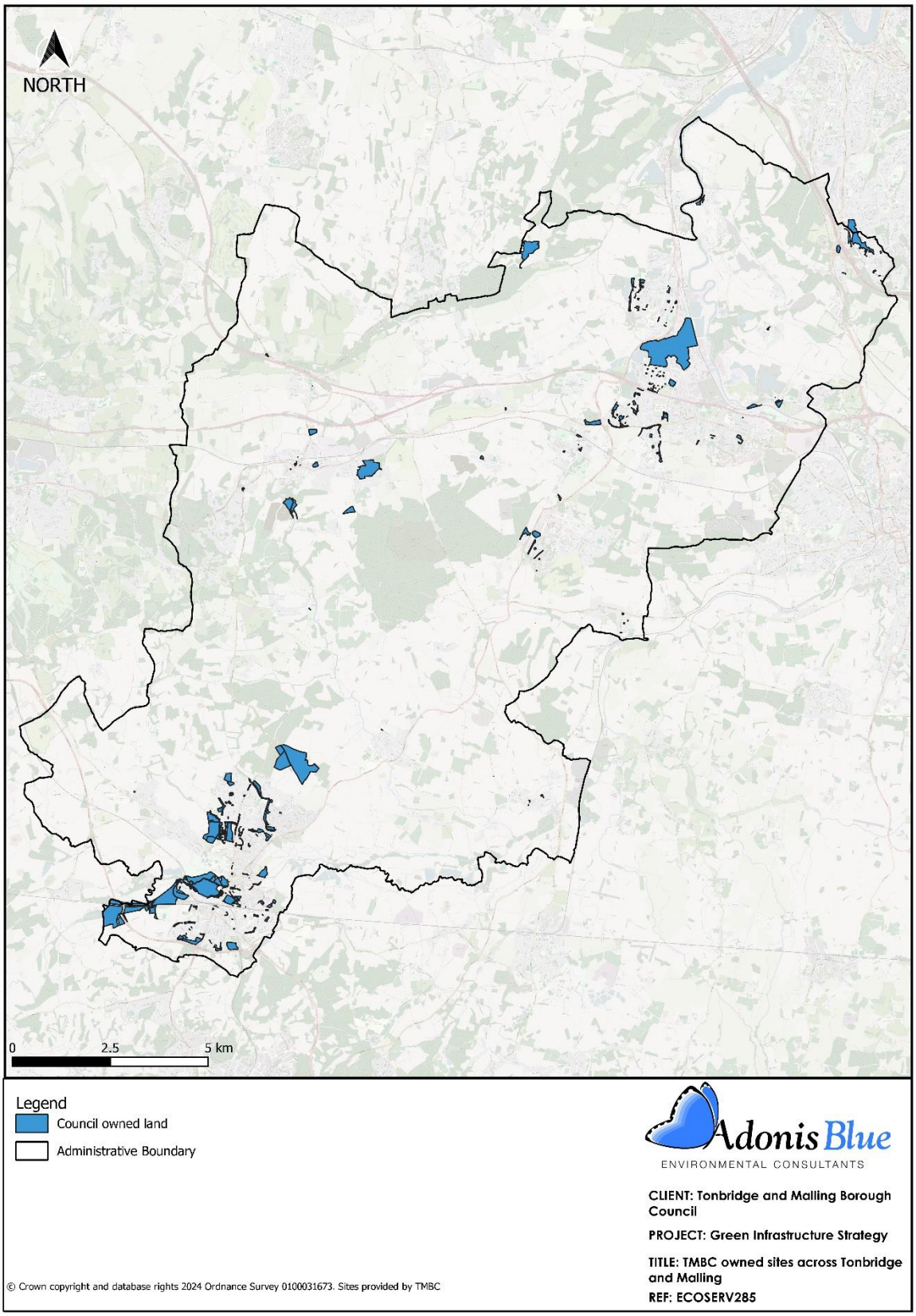
6 Modelling GI potential on TMBC owned land

6.1 GI quality assessment

Introduction

6.1.1 Following on from sections 4 and 5, this GI assessment provides further context to the capacity of TMBC owned sites to provide various ecosystem services related to Nature-based Solutions (NbS). The NbS approach is consistent with GI and provides tools to deliver GI recommendations, assessing and mitigating problems and risks at a spatial level whilst considering human and wildlife interactions within these locations to provide wider benefits. It has been designed to assess how green infrastructure opportunities through ecosystem services and public accessibility are currently provided on TMBC sites (Figure 19) and rank the various sites across these range of services.

Figure 19. Map of all Council owned land in Tonbridge and Malling.



Method

6.1.2 This methodology was designed to assess how TMBC sites currently provide green infrastructure opportunities through ecosystem services and public accessibility. Natural England's GI Framework Standards[87] provides guidance on the criteria for the quality and quantity of accessible green spaces. Part of this guidance includes the Accessible Natural Greenspace Standard (ANGSt), which provides targets for the proximity of greenspaces at a range of scales to every household within an administrative boundary (Table 3). This method covers how the sites were assessed against a selection of ecosystems services and the ANGSt criteria, with scoring and prioritisation of sites through a RAG system, with limitations of this assessment in Appendix 2. Further to this assessment of sites, opportunities and recommendations for sites have been provided in line with their potential to support GI in TMBC.

Site Filtering

6.1.3 For the purposes of the GI opportunities assessment, the following sites were excluded:

- Sites with an area of less than 0.5ha
- Sites that are wholly or substantially covered by buildings and hard standing where no major habitat alteration could take place.
- Sites lacking sufficient detailed information within the provided dataset.

6.1.4 The first two types of sites listed here are best suited to small scale green infrastructure which cannot be assessed in detail in this strategy. For example, a built-up area in the flood zone may benefit from rain gardens, swales, or other sustainable drainage systems to help stop water from pooling in concreted areas.

6.1.5 All sites not excluded would require a further detailed assessment of individual constraints before any specific GI plans can be developed and implemented.

Ecosystem Services of Green Spaces

6.1.6 An analysis was carried out using the datasets in Appendix 2 to determine where additional ecosystem services benefits could be provided and should be prioritised on the remaining council owned land after filtering the sites. To determine these additional opportunities, the following methodology was followed against all remaining TMBC sites:

Wildlife Corridors:

6.1.7 Sites were checked against Kent Wildlife Trust's draft Nature Recovery Network[88], as a proxy for the final version which is expected as part of the Local Nature Recovery Strategy. Sites were given a score of 0 - 2 to indicate whether the area could be enhanced to support the development of wildlife corridors depending on whether they intersected with the core zone (within the NRN the core zone represents protected sites and habitats, including freshwater areas, a score of 2), the recovery zone (the recovery area represents the best

[87] Accessible Natural Green Space Standards in Towns and Cities: A Review and Toolkit for their Implementation - ENRR526 (naturalengland.org.uk)

[88] Nature Recovery | Kent Nature

areas to connect, buffer and enhance around the core zone, a score of 1), or not at all (a score of zero).

Biodiversity Importance:

6.1.8 Sites were given a secondary score based on the Kent Wildlife Trust's draft Nature Recovery Network against their significance to wildlife. Sites in the core zone received a score of 4, and those in the recovery zone received a score of 2, and those in neither a 0. This was to show that those sites in the core zone have a high significance for wildlife.

Natural flood management:

6.1.9 Sites were checked against the Environment Agency Flood Zone 2 and 3 layers. Sites were given a score of 1 if they intersected with the layer or 0 if they did not, as areas within the layer were considered to have opportunities for water related GI and flood management.

Air pollution:

6.1.10 Sites were checked against DEFRA Modelled Background Pollution Data for pm2.5 and NO2, as well as whether they fell into a DEFRA Air Quality Management Area (AQMA). A score of 'Low,' 'Medium', or 'High' was allocated for Air Pollution in accordance with World Health Organization (WHO) air quality guidelines[89]. Any sites that fell into an AQMA were given a score of 'High'. High, Medium, and Low were scored numerically as 3, 2, and 1 respectively to indicate that areas of high air pollution are opportunities for GI interventions.

Noise pollution:

6.1.11 A 200m buffer was added to the OS Open Roads map and an intersection was performed with the sites. Sites that intersected with motorways and A-roads were assigned a noise pollution score of 'High', B-roads a score of 'Medium', and all other smaller roads a score of 'Low'. High, Medium, and Low were scored numerically as 3, 2, and 1 respectively to indicate that areas of high air pollution are opportunities for GI interventions.

Deprivation score:

6.1.12 An intersection was performed between the index of multiple deprivation (IMD) and the sites, based upon the Lower Super Output Geographic Areas dataset (LSOA), a geographical subdivision used for statistical reporting. Sites were given a score of 1 or 0 as to whether they could provide access to nature to deprived areas with sites scoring ≤5 on the IMD (deprived) given a '1' and sites scoring >5 on the IMD (not deprived) given a '0'. Note: this also depends on public rights of way, if a site is closed access, it will not provide this ecosystem service therefore these have been scored '0'.

Habitat for pollinators:

6.1.13 Sites were checked against Buglife B-Lines and an intersection was performed. Sites were given score of 1 or 0, depending on whether they intersected with B-Lines, with '1'

[89] https://www.eea.europa.eu/publications/status-of-air-quality-in-Europe-2022/europes-air-quality-status-2022/world-health-organization-who-air

indicating the area overlaps with a B-Line and provides an opportunity to enhance habitat for pollinators, and '0' indicating no overlap.

Accessible Natural Greenspace Standards (ANGSt):

6.1.14 The earlier ranking of sites against ANGSt was used to determine a score of access for the assessment methodology. The four classifications were provided a numerical score based on their capacity to provide access to the public. The access levels were scored at 0 – 3, with 3 being fully provisioned and 0 being no provision.

- Not currently provisioned within a at the doorstep, local or neighbourhood level.
- Provisioned with a doorstep OR local greenspace only.
- Provisioned with a neighbourhood greenspace only.
- Fully provisioned with a doorstep OR local greenspace AND a neighbourhood greenspace.

Site size

6.1.15 Finally, sites were score by their size to indicate that larger sites have the potential to provide more and wider opportunities. The following system was adopted for this strategy:

- 0 – 1 ha = 0 points
- 1 – 3 ha = 0.5 points
- 3 – 10 ha = 1 points
- 10 – 50 ha = 2 points
- Over 50ha = 3 points

RAG Analysis of Sites

6.1.16 A RAG analysis has been employed to categorise sites based upon their ability to provide the various ecosystem services listed above. This is indicated by:

- Green = High potential. Sites that score highly on all ecosystem services, public accessibility and wider biodiversity.
- Amber = Medium potential. Sites score well against most of the criteria, or highly in public accessibility and wider biodiversity.
- Red = Low potential. Sites score poorly across most criteria or only highly in one of the assessment criteria.

6.1.17 All the numerical scores for each site were added together to determine a total score. Table 5 shows the range of scores available and their allocation to Red, Amber or Green for the RAG assessment.

Table 5. Ranked Scores for RAG analysis.

RAG Colour	Number of Points
Green	15 - 21
Amber	8 - 14
Red	0 - 7

RAG Analysis Results

6.1.18 Table 6 provides a summary of the scores and RAG ratings for each site using the methodology outlined above. In total 48 sites were included in the analysis against multiple criteria that relate to GI and ecosystem services. Twelve sites highlighted in blue have been identified as priority sites. Seven sites scored within the green category of the RAG, with a further three in the amber. Areas in the table refer to the portion of any sites that fall within the TMBC administrative boundary and therefore may not include whole sites if they partially sit outside of Tonbridge and Malling.

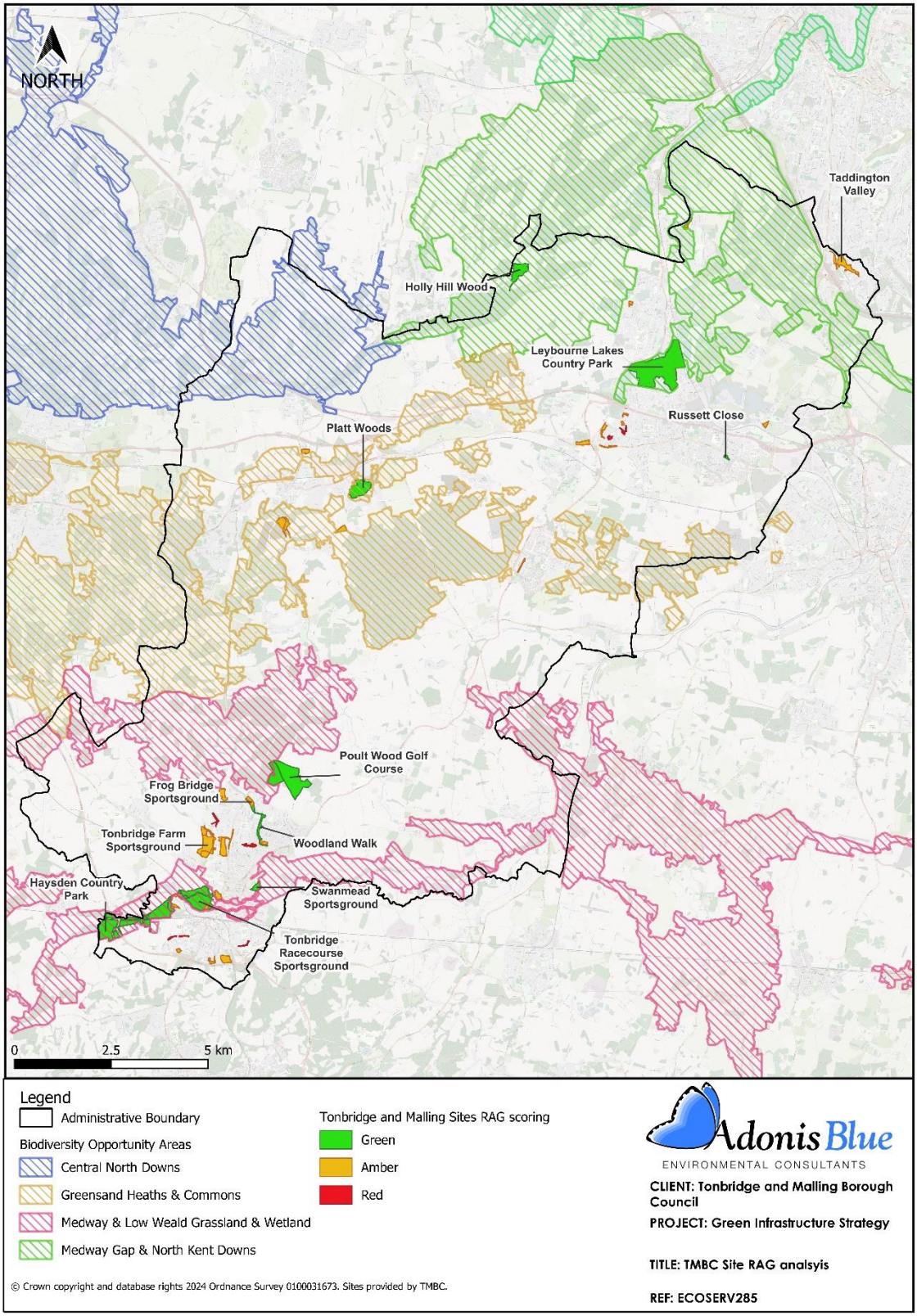
6.1.19 The priority sites were selected as those scoring "green" in the RAG, suggesting they have most potential across a range of ecosystem services. Therefore, they provide the highest number of options for GI. Additionally, three "amber" sites have been included. Tonbridge sportsground and Taddington Valley as their size provides them with considerable opportunities across some services, and Frog Bridge Sportsground as this adjacent to Woodland Walk and provides additional connectivity between this and Poult Wood Golf Course.

Table 6. summary of the results of the methodology outlined in section 4.

Area (ha)	Name	Size Score	Air Pollution	Noise Pollution	Flood Management	Deprived Area Priority	Pollinator Benefit	ANGSt	Wildlife Corridors	Biodiversity Importance	Total	RAG
1.71	Cage Green	0.5	1	1	0	0	0	3	0	0	5.5	
0.86	The Bomb Hole	0	2	1	0	0	0	3	0	0	6	
1.09	Baywell	0.5	2	1	0	0	0	3	0	0	6.5	
0.67	Lodge Oak Lane	0	2	3	0	1	0	1	0	0	7	
0.56	Waveney Road	0	2	1	0	1	0	3	0	0	7	
0.73	Waveney Road Woods	0	2	1	0	1	0	3	0	0	7	
1.20	Brook Street	0.5	1	3	0	0	0	3	0	0	7.5	
5.94	Tonbridge Cemetery	1	1	3	0	0	0	3	0	0	8	
2.70	The Napps	0.5	1	1	0	0	0	3	1	2	8.5	
0.60	Shipbourne Road	0	3	3	0	0	0	3	0	0	9	
0.80	Brindles Field Play Area	0	3	3	0	0	0	3	0	0	9	
4.25	Priory Wood	1	1	3	0	0	0	1	1	2	9	
0.78	Augers Field	0	3	1	0	1	1	3	0	0	9	
1.01	Barleycorn	0.5	3	3	0	0	0	3	0	0	9.5	
1.15	Brungers Walk	0.5	2	3	0	1	0	3	0	0	9.5	
1.22	Silver Close	0.5	2	3	0	0	0	1	1	2	9.5	
1.14	RCS Play Area	0.5	1	1	1	0	0	3	1	2	9.5	
0.51	Willow Mead	0	3	1	0	0	0	3	1	2	10	
0.64	Lillieburn open space	0	2	1	1	0	0	3	1	2	10	
0.68	Rear of Hamble Road	0	1	1	1	1	0	3	1	2	10	
2.89	Poplar Medow Cricket	0.5	1	2	1	0	0	3	1	2	10.5	
1.16	Scotchers Field	0.5	2	1	1	0	0	3	1	2	10.5	
1.18	Castle Way	0.5	2	1	1	0	0	3	1	2	10.5	

Area (ha)	Name	Size Score	Air Pollution	Noise Pollution	Flood Management	Deprived Area Priority	Pollinator Benefit	ANGSt	Wildlife Corridors	Biodiversity Importance	Total	RAG
1.48	Long Mead Way	0.5	2	1	1	0	0	3	1	2	10.5	
1.44	Clare Avenue	0.5	1	1	1	1	0	3	1	2	10.5	
1.93	Whitegate Field	0.5	1	1	0	1	1	3	1	2	10.5	
2.71	Tonbridge Angel Football Club	0.5	1	1	1	1	0	3	1	2	10.5	
3.06	Tonbridge Castle	1	1	2	1	0	0	3	1	2	11	
2.17	Frog Bridge Sportsground	0.5	1	3	1	0	0	3	1	2	11.5	
1.08	Part Flood retention ground	0.5	1	1	1	1	1	3	1	2	11.5	
0.88	Kate Reed Wood Walk	0	2	3	0	1	0	3	1	2	12	
11.63	Tonbridge Farm Sportsground	2	1	2	1	0	0	3	1	2	12	
0.58	Willow Road	0	2	1	1	0	0	3	2	4	13	
4.00	Quincewood Gardens	1	1	1	0	1	0	3	2	4	13	
7.21	Basted Mill, Stangate Hill	1	1	1	1	0	0	3	2	4	13	
9.53	Taddington Valley	1	1	1	0	1	1	3	2	4	14	
2.97	Leybourne Wood	0.5	1	3	1	0	0	3	2	4	14.5	
1.23	Riverside	0.5	2	1	1	0	1	3	2	4	14.5	
1.41	Alders Meadow	0.5	2	1	1	1	0	3	2	4	14.5	
3.46	Swanmead Sportsground	1	1	3	1	0	0	3	2	4	15	
17.36	Platt Woods	2	1	3	0	0	0	3	2	4	15	
57.35	Haysden Country Park	3	1	3	1	1	0	3	1	2	15	
12.81	Holly Hill Wood	2	1	1	0	1	1	3	2	4	15	
0.84	Russett Close	0	3	3	0	0	1	3	2	4	16	
6.15	Woodland Walk	1	1	3	1	1	0	3	2	4	16	
51.72	Poult Wood Golf Course	3	1	3	0	0	0	3	2	4	16	
32.60	Tonbridge Racecourse Sportsground	2	1	2	1	1	0	3	2	4	16	
87.76	Leybourne Lakes Country Park	3	1	3	1	1	1	3	2	4	19	

Figure 20. TMBC Sites identified in the RAG analysis coloured by score. Priority sites labelled and BOAs added to show how sites can link green corridors.



Ecosystem services on Council Owned Sites

6.1.20 As per the analysis above, Figure 20 shows the sites coloured by their RAG scoring and labels the location of the priority sites. This shows how the sites are distributed across the Borough.

6.1.21 Biodiversity Opportunity Areas (BOAs) have been used in Figure 20 as a proxy for the Draft Nature Recovery Network which is still in development. The BOAs show the sites in a context of how they might be used to create green corridors (as per Wildlife Corridor scoring above). Particularly to the south of the map, it can be seen there is a collection of smaller sites and Tonbridge Farm sportsground which could be enhanced to create a green corridor between parts of the BOA and other sites.

6.1.22 Sites included in the RAG analysis can be split broadly into those that could be prioritised for health and/or those that could be prioritised for biodiversity (Table 7). For health, the scores for air pollution, noise pollution, and deprived area access have been tallied, with those scoring over half (4 or more out of 7) being considered priorities for health. For biodiversity, the scores of flood management, pollinator benefit, and wider biodiversity have been tallied. Those scoring over half (3 or more out of 4) are considered priorities for biodiversity. Any sites that did not score over half on either health or biodiversity have not been listed. Priority sites are highlighted in blue however one priority site did not make it on either list despite overall decent scores. Tonbridge Farm Sportsground is generally well rounded on the RAG but fell short of being categorised specifically against health and biodiversity by a single point in each category.

Table 7. TMBC Sites identified as priorities for Health or Biodiversity

Site	Health Score	Site	Biodiversity Score
Lodge Oak Lane	6	Leybourne Lakes Country Park	4
Shipbourne Road	6	Riverside	4
Brindles Field Play Area	6	Russett Close	3
Barleycorn	6	Woodland Walk	3
Brungers Walk	6	Leybourne Wood	3
Kate Reed Wood Walk	6	Alders Meadow	3
Russett Close	6	Swanmead Sportsground	3
Augers Field	5	Tonbridge Racecourse Sportsground	3
Silver Close	5	Part Flood retention ground	3
Haysden Country Park	5	Willow Road	3
Woodland Walk	5	Taddington Valley	3
Leybourne Lakes Country Park	5	Holly Hill Wood	3
Waveney Road	4	Basted Mill, Stangate Hill	3
Waveney Road Woods	4		

Site	Health Score
Brook Street	4
Tonbridge Cemetery	4
Priory Wood	4
Willow Mead	4
Frog Bridge Sportsground	4
Leybourne Wood	4
Alders Meadow	4
Swanmead Sportsground	4
Platt Woods	4
Poult Wood Golf Course	4
Tonbridge Racecourse Sportsground	4

6.1.23 The RAG provides us with an understanding of how the sites can be enhanced to give them the best chance to deliver GI for Tonbridge and Malling. Table 8 outlines opportunities for the priority sites, focusing on how they have scored against the RAG. Although ground surveys would be required to provide robust detailed recommendations of improvement. The RAG provides context to the potential for these sites.

Table 8. Opportunities for the twelve priority sites highlighted by the RAG assessment.

Name	Opportunities highlighted by the RAG assessment
Frog Bridge Sportsground Tonbridge Farm Sportsground Tonbridge Racecourse Sportsground Swanmead Sportsground	For these four sites two key indicators are noise pollution and flood management. All four sites are primarily grassland bordered by suburban housing and within flood zones, being in close proximity to the River Medway and/or its tributaries; flood risk mitigation is therefore of prime importance here. Considerations should be made to how these sites can be adapted to allow rainwater to move through the landscape in a controlled and stable way rather than flowing into nearby streams and rivers. The addition of swales, reedbeds or ponds may help store water and allow for a slow release. There are limitations to what can be done to tackle noise pollution, but strategic planting of trees may help create a buffer against local noise of roads and people. Whilst none are in B-Lines and therefore did not score for pollinators, meadow buffer strips around the site would

Name	Opportunities highlighted by the RAG assessment
	have the added benefit of flood mitigation and provision of nectar sources for insects. Tonbridge Racecourse Sportsground also scored on the deprivation score meaning it falls within an area at the lower end of the deprivation index. Increased provisions and recreation for local people should therefore also be considered a priority here.
Platt Woods Woodland Walk	Platt Woods and Woodland Walk both scored highly on the indices for wider biodiversity importance and public access. Both also scored highly on noise pollution due to proximity to busy roads. However, as both sites are woodland surrounded by suburban settlements there may be limits as to what could be done to increase noise pollution buffering at these sites. The focus for these sites should be to continue to enhance and maintain their value for biodiversity through management and removal of invasive species, and maintain its value to people through ensuring access for all physical capabilities.
Poult Wood Golf Course	Similarly to Platts Woods, Poult Wood Golf Course scored highly on biodiversity and public access. Focus for this site would be to enhance the habitats where possible to do so without hindering the operational constraints of the golf course. This could include improving grassland diversity on areas outside of the playing greens, and building in water management features so that the greens can be managed more effectively during drought without impacting local water supplies. Also, there is an opportunity to create a green corridor by linking Platts Woods and Poult Wood Golf Course via planting of hedgerows and woodland strips.
Haysden Country Park Leybourne Lakes Country Park	Haysden Country Park and Leybourne Lakes Country Park have similar broad habitats identified in the baseline and are the most diverse of the priority sites. Both contain large lakes and are prime areas for flood management with Haysden Country Park in close proximity to the River Medway, and Leybourne Lakes Country Parks land drainage systems and being adjacent to the Leybourne/Snodland Mill Stream. NbS focus on these sites should be the riparian areas, i.e. land adjacent to rivers and streams, and water related solutions, increasing opportunities for wetland habitats such

Name	Opportunities highlighted by the RAG assessment
	as flood plain meadows to provide natural flood protection and species diversity. Both also scored for deprived area priority, therefore maintaining public access for all should be considered.
Russett Close	Russett Close scored highly for biodiversity opportunities. Areas of short mown grass could be transitioned to meadow areas, where not used for informal recreation. There could also be opportunities to enhance habitat diversity by managing fringes to perimeter trees to develop into area of scrub/tall vegetation to enhance floral and structural diversity. Some further tree planting could enhance biodiversity, however given the site's close proximity to the A20 such planting might only provide limited mitigation of any air quality issues.
Taddington Valley Holly Hill Wood	Both Taddington Valley and Holly Hill Wood are located in B-Lines. These B-Lines represent wildlife corridors that connect important habitats across the landscape. Woodland opportunities for pollinators can be rare. Coppicing allows for open woodland rides and glades to gain sunlight which can boost insect diversity. Any areas of grassland should look to be enhanced to meadows. Both also scored for deprived area priority, therefore maintaining public access for all should be considered.

Conclusion and Discussion

6.1.24 For land in TMBC ownership, there is a good selection of sites over 0.5 hectares providing (or having the potential to provide) a range of ecosystem services and access for local people, with most of the sites scoring green or amber on the RAG list and several priority sites identified. This suggests that TMBC sites overall have a good capacity to provide GI opportunities across the Borough. Table 7 shows that many more sites scored highly for health but there are some key large sites or biodiversity. This overall assessment of Green and Blue Infrastructure across the Borough can only be achieved at the two larger scales of GI (Neighbourhood and Wider Countryside). It is not possible to investigate GI at the scales of buildings and streets within this document as that requires much more detail than is available at this time. These two scales are incredibly important for bridging gaps and helping to build green corridors across Tonbridge and Malling, with urban grasslands (private gardens) making up around 1,124 hectares of land, this is a significant green space if considered as a whole, and diversity of these is impossible to model.

6.1.25 TMBC sites only make up a small portion of the GI across the Borough but the Council's authority to set guidance, targets, and mandates for others helps link and connect TMBC

sites with others within the Borough. Developing partnerships with landowners in the Borough is key to making sure that people and nature's access to the land is maintained and considered at a local scale. Whilst the RAG scores against various datasets to determine potential for ecosystem services, it cannot comment directly against the existing situation of a site without ground truthing surveys. For example, sites that have scored as good for flood management might require intervention to provide this service or may currently provide it. Sites that sit in the B-Lines might not currently have good wildflower meadows but have been flagged as good sites to consider for wildflower meadow creation.

6.2 Opportunities for NbS on TMBC Priority areas

6.2.1 NbS can be used through GI to provide solutions to climate change, extreme weather and biodiversity issues. However, beyond the big picture, simple NbS allows local people to live without disruption and improve their health through various means. Designed swales allowing controlled water run-off, woodland strips providing buffers to road pollution, and Reserves and country parks, where publicly accessible, providing escape and well-being from stress. NbS can help provide a solution to problems identified in the baseline section and the Table 5. Strengths, challenges and opportunities for green infrastructure in Tonbridge and Malling.

6.2.2 NbS can be a key mechanism to deliver GI recommendations and positively influences the following strategic priorities for TMBC's GI:

- Protect, connect, buffer and enhance existing biodiversity networks, designated sites and natural areas of conservation value or potential, building green corridors for wildlife to thrive.
- Using NbS as the basis of GI creates adaptive mechanisms that work with nature not against it, and developing GI that is more resilient in the long-term.
- Protect, enhance and seek to expand areas of Kent Biodiversity Strategy Priority Habitats notable within Tonbridge and Malling Borough (ancient woodland, traditional orchard, lowland calcareous grassland, acid grassland and heath, coastal and floodplain grazing marsh, and coastal saltmarsh).
- Protect, enhance and seek to expand populations of Kent Biodiversity Strategy Priority species within Tonbridge and Malling Borough including turtle dove, nightingale, swift, adder, calcareous butterflies, lapwing, water vole, and other protected species.
- Use GI to overcome climate change challenges and build resilience to increasing extreme weather events.
- Ensure new GI is well designed and resilient to pressures of population growth including increasing access and usage.

6.2.3 NbS regardless of its type (for example biodiversity net gain, carbon sequestration, or nutrient mitigation) should follow a set of guiding principles from International Union for Nature Conservation (IUCN) or other governing bodies. There is an increasing shift towards a net gain approach for projects relating to biodiversity. Rather than simply avoiding loss and maintaining or conserving what is there, the goal is to improve upon the situation that exists and provide uplift. BNG is now mandatory with development expected to achieve a

minimum of 10% net gain for biodiversity. As NbS continues to increase in demand there is a need for clarity and a framework to develop NbS projects and the IUCN has developed a Global Standard for NbS[90] which looks to provide this framework and provide consistency globally in the approach to NbS.

6.2.4 Within the UK specifically there is the mitigation hierarchy employed by ecological practitioners and developers that helps conform a British standard[91] to avoid biodiversity loss. Previously the primary focus was on avoidance and on-site mitigation for protected species. This meant doing everything possible to avoid losing biodiversity in the first place before deciding to deliver ecological restoration projects to compensate for losses. More recently however, this has been revised to ensure projects comply with Biodiversity Net Gain and re-emphasises the need to restore, compensate and be additional for nature within the hierarchy below (Table 9)[92].

Table 9. CIEEM Good Practice Requirements for Delivering Biodiversity Net Gain (On- and Off-Site)

Avoid:	Habitats are retained
Minimise:	Development is redesigned to limit the extent of the land take from natural habitats
Restore:	Condition of on-site habitat is improved (e.g. degraded habitat is brought back into good condition)
Offset/Compensate:	Create habitat of similar type where it did not previously occur, or enhance existing habitat elsewhere
Additional Actions:	Use to achieve the desired target level of gain

6.2.5 In addition to benefiting biodiversity, designs should consider wider environmental, social and economic benefits that can be achieved. Sustainability and nature-based solutions should be integrated into designs for GI so that they are well-rounded providing a multitude of benefits. This can help tackle many of the issues in the Strengths, Challenges and Opportunities Table above as there is not enough room for everything society requires. Land and space are a finite resource, balancing the needs of a growing population with the needs of nature plus futureproofing for climate change is a big task. To provide all these elements it is necessary to shift from a single use approach to a multi-use approach. Rather than packaging different pieces of land up for individual uses (food, recreation, housing), a multi-use approach, which also lines up with NbS, is to design spaces to provide more than one function. For example, this might look like using fruit trees for planting schemes around local parks, using hedgerows in place of fences, and creating rain gardens in new housing developments around car parking spaces.

6.2.6 Every site has unique opportunities to provide GI and NbS, which will be dependent on various factors including accessibility, geology, hydrology, proximity to the local community, etc. The assessment of the TMBC Sites provides an overview from available

[90] 2020-020-En.pdf (iucn.org)

[91] Good Practice Requirements for Delivering Biodiversity Net Gain (On- and Off-Site) (July 2021) | CIEEM

[92] Biodiversity net gain. Good practice principles for development. A practical guide (cieem.net)

data and can be used to help inform the potential for sites to be multi-use. Table 10 in section 7.2.4.2 provides further detailed recommendations for each site based against four criteria (biodiversity, health, climate, and water).

7 Recommendations

7.1 Recommendations for the Local Plan

Introduction

7.1.1 The Local Plan is a mechanism that local planning authorities use to guide and manage development in their area. TMBC's next Local Plan will set out policies and proposals for the use of land and buildings to 2041. The Local Plan can be used as a delivery mechanism for GI by seeking to protect existing GI from development and include policies that promote the creation, protection, and enhancement of GI. Recommendations for the Local Plan include:

LP1: When allocating land for development, the Local Plan should seek to avoid loss of areas of existing GI as identified in Figure 12 of the GI Strategy where possible.

LP2: The Local Plan could include a policy to encourage new development to plan for and provide new GI. The provision of new natural and semi-natural open space and amenity green space as identified in this GI Strategy, should take account of the habitat and species within the Biodiversity Opportunity Areas and emerging Local Nature Recovery Strategy focusing on, but not exclusive to, the Priority Opportunity Areas identified in this document.

LP3: Consideration should be given to including reference to GI into various Local Plan policy areas to ensure that the important links between GI and other areas i.e. health, active transport, climate change and biodiversity conservation are fully realised. Reference to GI could be included within the Local Plan vision and overarching objectives.

LP4: Consider designating sites as Local Green Spaces[93] through the Local Plan and/or promoting them through Neighbourhood Plans to further protect GI assets.

LP5: The Local Plan should consider including a policy on BNG to set out the council's expectations and consider seeking greater than the mandatory 10% BNG where possible, verifying local need, viability and availability of BNG sites.

LP6: Where appropriate seek opportunities for the integration of GI in Design Codes.

LP7: The Local Plan could consider requiring climate resilient measures into the design of new developments including, but not limited to, the provision of SuDS, Natural Flood Management (NFM), urban cooling, and LNRS for wildlife etc.

LP8: The Local Plan could explore the option for a Tree Canopy Cover policy which sets a target percentage for new developments.

LP9: The Local Plan could explore opportunities to encourage development to incorporate Nature-based Solutions (NbS) during the initial design and planning stages of new developments.

7.2 Recommendations for other Council Functions

7.2.1 The section below provides additional recommendations covering climate change, infrastructure and Council owned land. Delivery partnerships are important in order to achieve the goals of this GI strategy utilising external expertise, resources and funding

[93] Open space, sports and recreation facilities, public rights of way and local green space - GOV.UK

opportunities. Continuing to build on existing relationships with key delivery partners e.g. other public bodies, developers and homeowners, community, voluntary groups and businesses, users and contractors on the TMBC estate will enable this to be achieved. TMBC's continued successful management of parks, open spaces, and leisure centres will provide enhanced multi-functional recreational facilities for wildlife and people.

Climate Change

7.2.2 In addition to the Local Plan recommendations that will support climate change adaptation and mitigation, a number of Council owned sites offer the potential to further support or enhance GI to deliver co-benefits for climate, well-being and healthy ecosystems. A number of Council owned sites have potential to provide flood mitigation, alongside other co-benefits in terms of ecosystem services and natural capital. Further tree planting opportunities could also ensure existing valued habitats are not inadvertently negatively impacted, that the purpose of the planting is clear, appropriate species are used and appropriate after-care is planned for and provided. For example, future tree planting and management should be undertaken by landowners, developers and partners to gain benefits such as shade, heat dissipation and rainfall moderation by considering factors such as planting mix, locations, together with the coppicing and pollarding of existing trees and plantings in riparian corridors.

CC1: Implement TMBC's Tree Charter to enhance GI and develop skills and evidence for NbS to mitigate adverse climate change and deliver co-benefits, including carbon sequestration and storage.

CC2: Investigate appropriate tree planting and establishment opportunities in wards where tree canopy cover is below the target 19%: Aylesford South, Castle, Hadlow and East Peckham, Higham, Larkfield South, Snodland East and Ham Hill, and Trench.

CC3: Develop a borough-wide flood mitigation strategy centred on NbS that seeks to sustain or enhance the access and use of green, open and amenity places across the borough into the medium term as flood events and severity increase in frequency.

CC4: Develop opportunities for smaller-scale GI in built-up areas to support adaptation to climate change, including more intense and more frequent heat and floods, protect infrastructure, and enhance wildlife corridors.

Infrastructure

IN1: Seek opportunities to encourage KCC PROW and Highways and other landowners/managers to use GI to support and enhance roads, highways and railway embankments as wildlife corridors e.g. trees/hedges used as barrier between road traffic and footpaths where possible through off-site BNG mechanisms.

IN2: Seek opportunities to deliver new GI in those areas of the Borough where deficiencies have been identified including areas to the north of Holborough, to the east of Ditton, to the north of Wateringbury, and central and southeast of Tonbridge.

IN3: Identify where TMBC and Parish land are contiguous and could support and enhance GI networks through partnership working, including through their Parish Infrastructure Statements.

Council Owned Land

CO1: Review management plans, when next updated/reviewed, for priority sites such as Haysden Country Park, Leybourne Lakes Country Park, Tonbridge Racecourse Sportsground and Holly Hill Wood to identify changes in management and maintenance to improve GI within and connecting to those sites.

CO2: On TMBC owned land where present, protect, enhance and seek to expand areas of Kent Biodiversity Strategy Priority Habitats (See Appendix 1).

CO3: On TMBC owned land where present, protect, enhance and seek to expand areas of Kent Biodiversity Strategy Priority Species. (See Appendix 1).

CO4: The Council could undertake an Ecological Baseline Assessment to further understand the current function of priority sites, indicated in this report in Table 10.

CO5: A Natural Capital Assessment could be commissioned for the priority sites to identify potential income streams for proposed actions of land change.

7.2.3 In terms of the further surveys and reports recommended in this strategy, it is recommended that the following ordering take place for priority sites mentioned in this report:

- Firstly, sites should have an Ecological Baseline Survey, which will provide further understanding of the current functionality of the sites and any possible constraints relating to habitats or current land use (recreation or otherwise). This would help inform interventions and green infrastructure opportunities specifically related to each site. It would also provide detailed recommendations for biodiversity enhancements and any notable protected species that can be supported through green infrastructure measures.

- Secondly, for sites where major water related features (rivers, streams) and risk of flooding from the ecological baseline and desktop work have been noted. A Flood Mitigation report should be undertaken to identify flood alleviation measures that could take place through blue infrastructure. In particularly this should focus on nature-based solutions such as rewetting grasslands and developing seasonal wetlands to reduce peak flows to water courses. Additionally, this can consider and investigate rainwater harvesting and other measures to alleviate drought concerns due to climate change.

- Finally, a Natural Capital Assessments could be done identify potential income streams from proposed actions of land change through various payments for ecosystem services such as BNG, Carbon or Nutrient Neutrality. Green Infrastructure can be costly therefore investigating ways that it could be funded for 30+ years through private and public finance are worth considering.

7.2.4 Table 10 provides some indicative recommendations for Priority Opportunity Sites based on desktop research. The first row shows overarching Objectives and Recommendations. Subsequent rows show site specific recommendations.

Table 10. Recommended Interventions on Priority Opportunity TMBC Owned Sites

Site	Objectives/Recommendations
Overarching	<u>Protect and Enhance Biodiversity</u> • Enhance the existing priority habitat deciduous woodlands by ensuring that it is maintained in good/favourable condition. • Where possible retain trees with features associated with biodiversity such as those with potential bat roost features. • Increase grassland species diversity by over-sowing and late summer cut-and-collect management. • Enhance habitat connectivity by managing hedgerows, lines of trees and shelterbelts to maintain diversity of native species, fruits, berries and flowers to benefit pollinators, other invertebrates, birds and small mammals. • Enhance grasslands on sites in close proximity to the river by increasing species diversity to include species typical of lowland meadow and floodplain meadow habitat. <u>Develop Resilience to Climate Change</u> • Review woodland structural diversity, age class composition and species to provide an assessment of climate resilience. This may be achieved through condition assessments such as England Woodlands Biodiversity Group Woodland Condition Assessment and the Forestry Commission Climate Matching Tool. • Where possible retain mature trees as they are likely to maintain carbon storage contributing to climate change resilience and tree canopy provision. • Monitor change in species composition in response to Ash Dieback. <u>Increase Sustainable Water Management</u> • Riparian and watercourse edge features should be retained, enhanced, and where possible extended to replicate and serve as floodplain, inundation grasslands, scrub, bankside trees and similar habitat features. <u>Improve Health and Well-being</u> • Continue to maintain and enhance the quality of GI features, including a variety of habitats to increase wildlife, and thereby contact with nature that is widely considered to support and improve Health and Well-being. • Protect existing established trees which can provide cooling and shade, making sites more attractive places to spend time in the outdoors with related well-being benefits. • Retain and enhance footpaths both public rights and informal paths.
Frog Bridge Sportsground	<u>Protect and Enhance Biodiversity</u> • Increase species diversity in grassland where a short sward is not essential for sports by implementing late summer cut and collect regime. Ideally a variety of sward heights from 15-50cm should be present. • Increase species diversity by over-sowing with a site-specific wildflower mix. • Retain and enhance the riparian corridor to Pen Stream and managing vegetation in particular with reference to connectivity with the ancient semi-natural woodlands Frogbridge Wood and Higham Wood.

Site	Objectives/Recommendations
	• Manage on site woodland to support the connected woodland corridor associated with Frogbridge and Higham Woods. <u>Increase Sustainable Water Management</u> • Frog Bridge incorporates the Pen Stream, a tributary of other streams that connect with the River Medway. GI approaches may be implemented on this Council owned site to provide sustainable water management such as mitigating flood risk, improving water quality and managing peak water flow. <u>Improve Health and Well-being</u> • Continued provision of open play and recreational areas such as Frog Bridge with a diversity of semi-natural areas is beneficial and provides reinforcement to experiencing nature through the opportunity to explore a variety of habitat features.
Haysden Country Park	<u>Protect and Enhance Biodiversity</u> • Retain existing floodplain mosaic habitat features - such as grassland, ditches, watercourses in good condition to maximise floristic species diversity thereby increasing habitat for invertebrates such as dragonflies, aquatic invertebrates, and important priority species such as water voles. <u>Improve Health and Well-being</u> • Continue to maintain and improve access facilities to provide greater opportunities to access the open spaces, habitats and nature provided at Haysden Country Park, which can make positive contributions to health and well-being.
Holly Hill Wood	<u>Protect and Enhance Biodiversity</u> • Reinstate and maintain coppice cycle to support biodiversity features associated with ancient woodland as indicated in the Local Wildlife Site citation, such as ancient woodland indicators and rare species such as Yellow Birds-Nest *Hypopitys monotropa* which may be still present. <u>Develop Resilience to Climate Change</u> • Retain veteran trees to woodland and boundary features including beech *Fagus sylvatica* and ideally veteran and ancient ash *Fraxinus excelsior* coppice stools if present particularly with reference to provision of beech mast and tree seeds for resilient native provenance seed sources.
Leybourne Lakes Country Park N.B. Whilst this is a TMBC asset the day-to-day management falls to tmactive	<u>Protect and Enhance Biodiversity</u> • Consider specific actions for priority species such as water voles by reducing disturbance, bank side erosion and predation. <u>Develop Resilience to Climate Change</u> • Consider actions to maintain water table levels. • Encourage a greater diversity of native trees within the canopy. <u>Increase Sustainable Water Management</u>

Site	Objectives/Recommendations
	• In consultation with stakeholder and partner organisations manage habitats, woodland and riparian habitats to maximise natural flood management in particular reducing peak flows to water courses.
Platt Woods	<u>Protect and Enhance Biodiversity</u> • Maintain ancient woodland features including species and structural diversity including retaining historic landscape features and the sites appeal to the local community. • Removal and control of invasive *Rhododendron ponticum* and any other invasive species present. Whilst attractive, rhododendrons create ground toxicity which kills off and stunts the growth of native trees and flowering plants. • Enhance the woodland with nest boxes for species such as tawny owl, bats and hazel dormouse. • Investigate creating supplementary. • Investigate the opportunity to create a green corridor by linking Platt Wood with Poult Wood via planting of hedgerows and woodland strips. <u>Improve Health and Well-being</u> • Retain and enhance footpaths which might include woodland ride management. • Maintain public accessibility through management and maintenance of PRoW.
Poult Wood Golf Course N.B. TMBC asset the day-to-day management falls to the tmactive	<u>Protect and Enhance Biodiversity</u> • Use existing woodland shaws and shelter belts to provide continuity of habitat throughout site and habitat features beyond site boundary particularly ancient semi natural woodland, for example by investigating the opportunity to create a green corridor by linking Poult Wood with Platt Wood via planting of hedgerows and woodland strips. <u>Increase Sustainable Water Management</u> • Ensure sustainable water management to meet both the needs of the golf course and manage water as a Natural Capital and Ecosystem service resource is a priority. This is likely to require incorporation into most aspects of the golf course management and require working with partners and stakeholders. <u>Improve Health and Well-being</u> • Continue to maintain and enhance the quality of green infrastructure features at Poult Wood Golf Course including variety of habitats to increase wildlife and thereby contact with nature by visitors, golfers and golf course staff. • Encourage visitors, golfers and staff to enjoy and appreciate wildlife by recording sightings and explaining wildlife friendly management initiatives.
Russett Close	<u>Protect and Enhance Biodiversity</u> • Investigate selective tree planting to complement existing tree stock, including the possibility of scattered orchard species. • Relax mowing regime, including around the perimeter trees to encourage taller flora thereby increase vegetative and structural diversity. • Increase species diversity in grassland where a short sward is not essential for informal recreation, such as dog walking and football, by implementing late summer

Site	Objectives/Recommendations
	cut and collect regime. Ideally a variety of sward heights from 15-50cm should be present. • Increase species diversity by over-sowing with a site-specific wildflower mix for pollen and nectar resources for invertebrates and in particular bumble bees. <u>Improve Health and Well-being</u> • Continue to maintain and enhance the quality of green infrastructure features at Russett Close, including variety of habitats to increase wildlife and thereby contact with nature by local residents. • Encourage local residents to enjoy and appreciate wildlife by recording sightings and explaining wildlife friendly management initiatives.
Swanmead	<u>Protect and Enhance Biodiversity</u> • Increase grassland species diversity by over-sowing with a site-specific wildflower mix. • Evaluate role in maintaining biodiversity features to Millstream and connected watercourses.
Taddington Valley	<u>Protect and Enhance Biodiversity</u> • Protect and monitor the significant hornbeams *Carpinus betulus* which have in past clearly been managed as trees of coppice and pollard habit. A number of these exhibit features associated with veteran trees. • The valley bottom supports open grassland. Retain and enhance and encourage a woodland ride structure through regular management. • Reinstate and maintain coppice cycle to support biodiversity features associated with ancient woodlands. • Enhance the woodland with nest boxes for species such as tawny owls, bats and hazel dormouse. • In non-wooded areas look to enhance grassland floral diversity for pollinators. • Control human foot-traffic through the site by providing well maintained pathways to limit impact on the remainder of the woodland. • Retain some of the wood from trees that need to felled, as decaying wood habitat to be secured with standard tree/arboricultural wires to afford habitat for species such as woodpeckers, bats and saprolytic invertebrate species that are dependent on such habitat. <u>Improve Health and Well-being</u> • Communicate to local residents' the important features of site. • Engage community in management and recording wildlife. • Maintain public accessibility through management and maintenance of known paths. • Taddington Valley was noted as a site of deprived area access to green space, and therefore local access is paramount. N.B. A new Woodland Management Plan has just been approved by Members and is due to be submitted to the Forestry Commission for approval in 2024.
Tonbridge Farm Sportsground	<u>Protect and Enhance Biodiversity</u>

Site	Objectives/Recommendations
	• Create and manage native species tree and shrub habitat to provide flowers for pollen and nectar resources for invertebrates and in particular bumble bees. <u>Increase Sustainable Water Management</u> • The tree resource at Tonbridge Farm should be maintained to provide shade, to moderate the effects of predicted temperature increases and, by intercepting rainfall, to assist with reducing the effects of heavy downpours. N.B. In February 2024 a new five-year management plan has been approved by Members for public consultation and includes numerous environmental actions.
Tonbridge Racecourse Sportsground	<u>Develop Resilience to Climate Change</u> • Increase plantings to boundary to increase shading and heat dissipation. <u>Increase Sustainable Water Management</u> • Manage meadow habitats to ensure tall hay crop grasslands in summer, tussocky grassland in autumn and winter. Species such as meadowsweet and marsh foxtail should be encouraged where possible especially next to the River Medway.
Woodland Walk	<u>Protect and Enhance Biodiversity</u> • Investigate selective thinning of trees in order to open up areas of light to encourage diversity of ground vegetation. • Also investigate selective thinning of trees and shrubs on sections of the Pen Stream in order to encourage habitat and species diversity. <u>Increase Sustainable Water Management</u> • Woodland Walk, which passes through Frog Bridge Sportsground, incorporates the Pen Stream, a tributary of other streams that connect with the River Medway. GI approaches may be implemented on this Council owned site to provide sustainable water management such as mitigating flood risk, improving water quality and managing peak water flow. <u>Improve Health and Well-being</u> • Retain and enhance footpaths, which might include woodland ride management. • Maintain public accessibility through management and maintenance of PRoW.

7.3 Recommendations and Actions: Summary Table

Table 11. Recommendations and Actions Table showing Co-benefits.

Theme	Recommendations/Actions	Linked Key Outcomes and Co-benefits.				
		Appropriate Housing	Climate Change Resilience	Increased Biodiversity	Sustainable water management	Accessibility to Greenspaces
Recommendations for Local Plan and New Developments	**LP1:** When allocating land for development, the Local Plan should seek to avoid loss of areas of existing GI as identified in Figure 12 of the GI Strategy.	Y		Y		
	LP2: The Local Plan could include a policy to encourage new development to plan for and provide new GI. The provision of new natural and semi-natural open space and amenity green space as identified in this GI Strategy, should take account of the habitat and species within the Biodiversity Opportunity Areas and emerging Local Nature Recovery Strategy focusing on, but not exclusive to, the Priority Opportunity Areas identified in this document.	Y		Y		Y
	LP3: Consideration should be given to including reference to GI into various Local Plan policy areas to ensure that the important links between GI and other areas i.e. health, active transport, climate change and biodiversity conservation are fully realised. Reference to GI could be included within the Local Plan vision and overarching objectives.	Y	Y	Y	Y	Y
	LP4: Consider designating sites as Local Green Spaces through the Local Plan and/or promoting them through Neighbourhood Plans to further protect GI assets.	Y	Y	Y		Y
	LP5: The Local Plan should consider including a policy on BNG to set out the council's expectations and consider seeking greater than the mandatory 10% BNG where possible, verifying local need, viability and availability of BNG sites.	Y	Y	Y		
	LP6: Where appropriate seek opportunities for the integration of GI in Design Codes.	Y	Y	Y	Y	Y
	LP7: The Local Plan could consider requiring climate resilient measures into the design of new developments including, but not limited to, the provision of SuDS, Natural Flood Management (NFM), urban cooling, and LNRS for wildlife etc.	Y	Y	Y	Y	

Theme	Recommendations/Actions	Linked Key Outcomes and Co-benefits.				
		Appropriate Housing	Climate Change Resilience	Increased Biodiversity	Sustainable water management	Accessibility to Greenspaces
	LP8: The Local Plan could explore the option for a Tree Canopy Cover policy which sets a target percentage for new developments.	Y	Y	Y	Y	
	LP9: The Local Plan could explore opportunities to encourage development to incorporate Nature-based Solutions (NbS) during the initial design and planning stages of new developments.	Y	Y	Y	Y	
Recommendations for Climate Change mitigation	**CC1:** Implement TMBC's Tree Charter to enhance GI and develop skills and evidence for NbS to mitigate adverse climate change and deliver co-benefits, including carbon sequestration and storage.	Y	Y	Y	Y	
	CC2: Investigate appropriate tree planting and establishment opportunities in wards where tree canopy cover is below the target 19%: Aylesford South, Castle, Hadlow and East Peckham, Higham, Larkfield South, Snodland East and Ham Hill, and Trench.	Y	Y	Y	Y	
	CC3: Develop a borough-wide flood mitigation strategy centred on NbS that seeks to sustain or enhance the access and use of green, open and amenity places across the borough into the medium term as flood events and severity increase in frequency.	Y	Y	Y	Y	
	CC4: Develop opportunities for smaller-scale GI in built-up areas to support adaptation to climate change, including more intense and more frequent heat and floods, protect infrastructure, and enhance wildlife corridors.	Y	Y	Y	Y	Y
Recommendations for Infrastructure	**IN1:** Seek opportunities to encourage KCC PROW and Highways and other landowners/managers to use GI to support and enhance roads, highways and railway embankments as wildlife corridors e.g. trees/hedges used as barrier between road traffic and footpaths where possible through off-site BNG mechanisms.	Y	Y	Y	Y	Y
	IN2: Seek opportunities to deliver new GI in those areas of the Borough where deficiencies have been identified including areas to the north of Holborough, to the east of Ditton, to the north of Wateringbury, and central and southeast of Tonbridge.	Y	Y	Y	Y	Y

Theme	Recommendations/Actions	Linked Key Outcomes and Co-benefits.				
		Appropriate Housing	Climate Change Resilience	Increased Biodiversity	Sustainable water management	Accessibility to Greenspaces
	IN3: Identify where TMBC and Parish land are contiguous and could support and enhance GI networks through partnership working.	Y	Y	Y	Y	Y
Recommendations for Council Owned Land	**CO1:** Review management plans, when next updated/reviewed, for priority sites such as Haysden Country Park, Leybourne Lakes Country Park, Tonbridge Racecourse Sportsground and Holly Hill Wood to identify changes in management and maintenance to improve GI within and connecting to those sites.		Y	Y	Y	Y
	CO2: On TMBC owned land where present, protect, enhance and seek to expand areas of Kent Biodiversity Strategy Priority Habitats (See Appendix 1).	Y	Y	Y	Y	
	CO3: On TMBC owned land where present, protect, enhance and seek to expand areas of Kent Biodiversity Strategy Priority Species. (See Appendix 1).	Y	Y	Y	Y	
	CO4: The Council could undertake an Ecological Baseline Assessment to further understand the current function of priority sites, indicated in this report in Table 10.		Y	Y	Y	
	CO5: A Natural Capital Assessment could be commissioned to further inform detailed site-specific recommendations for priority sites in order to assess at a site-by-site level the most appropriate interventions.		Y	Y	Y	

8 Conclusion

8.1 This strategy has been developed to enable the protection, enhancement and connection of GI within the Tonbridge and Malling Borough. The national legislative drivers have been reviewed and articulated in terms of how they influence this strategy, as have national, regional, and local polices.

8.2 The GI assets within and adjacent to the Borough have been mapped and evaluated. In total, 48 TMBC owned sites were assessed. Of these, 12 sites have been identified as priority sites for GI interventions with opportunities and recommendations for potential improvement against various ecosystem services provided.

8.3 Through the analysis of baseline information, a review of the strengths, challenges and opportunities and recommendations have been formed for GI for TMBC's Local Plan. The Local Plan can be used as a delivery mechanism for GI by seeking to protect existing GI from development and include policies that promote the creation, protection, and enhancement of GI. Additionally GI recommendations covering other Council functions have been included, these cover climate change, infrastructure and Council owned land.

8.4 These recommendations could deliver a wide range of biodiversity, climate change adaptation and mitigation, economic, health and well-being benefits for residents and visitors to the Borough.

8.5 This GI Strategy provides a proportionate approach to fulfilling the Council's duties in respect to legislative requirements, deliver elements of the Corporate Strategy and Climate Change Strategy, and provide evidence for the Local Plan.

9 Glossary

Ancient woodland: an area which has been continuously wooded since at least 1600. These are often the richest woodlands in terms of biodiversity.

ANGSt: is a set of guidelines developed by Natural England and the Countryside Council for Wales. Its purpose is to ensure that people have adequate access to natural green spaces near their homes, particularly in towns and cities.

Biodiversity: the variation among living organisms in all environments, including terrestrial, marine and other aquatic ecosystems, and the ecological complexes of which they are part. Includes diversity within and between species, and ecosystems.

Biodiversity Action Plan (BAP): a strategy prepared for a local area to provide a framework for conserving and enhancing biodiversity, identifying priority species and habitats and setting out the necessary actions to safeguard these.

Biodiversity Net Gain (BNG): is a way of creating and improving natural habitats. BNG makes sure development has a measurably positive impact ('net gain') on biodiversity, compared to what was there before development.

Blue infrastructure: riverine and coastal environments, and canals and other strategic water features within a GI network.

Climate change adaptation: adjustments made to natural or human systems in response to the actual or anticipated impacts of climate change, to mitigate harm or exploit beneficial opportunities.

Climate change mitigation: action to reduce the impact of human activity on the climate system, primarily through reducing the sources of, or enhance the sinks for, greenhouse gases Community orchard: A collection of fruit trees planted among grass for the use of local residents, which provide places in which people can meet and plant/cultivate local food.

Ecosystem: a dynamic community of living organisms – animals, plants, fungi and microorganisms – and their physical environment that interact as a functional unit.

Green corridor: a strip of green land that connects green areas or hubs and allows the movement and dispersal of wildlife, usually through urban landscapes. Green corridors can also be used to link housing areas to, for example, cycle networks, places of employment, town centres and community facilities, thus promoting walking and cycling.

Green infrastructure (GI): a network of multi-functional green and blue spaces and other natural features, urban and rural, which is capable of delivering a wide range of environmental, economic, health and well-being benefits for nature, climate, local and wider communities and prosperity (National Planning Policy Framework, 2021).

Landscape character: the distinct and recognisable patterns and elements that occur consistently in a particular type of landscape, and how people perceive these.

Local Nature Recovery Strategy: a Local Nature Recovery Strategy (LNRS) is a new system of spatial strategies for nature in England that will cover the whole of the country The LNRS is designed to drive more coordinated, practical, and focused action to help nature recover.

Multifunctional: the ability to provide more than one benefit or function on a piece of land or across a GI network.

Natural capital: the stock of natural ecosystems that yields a flow of valuable ecosystem goods or services, directly or indirectly, to people, including ecosystems, species, freshwater, land, minerals, the air and oceans, as well as natural processes and functions. Natural capital includes many different components of the natural environment, as well as the processes/functions that link these and sustain life.

Nature-based solutions (NbS): actions that are inspired or supported by natural processes and which simultaneously provide environmental, social and economic benefits. Such solutions bring natural features and processes to cities, landscapes and seascapes.

Nature recovery network (NRN): an expanding, increasingly connected, network of wildlife-rich habitats supporting species recovery, alongside wider benefits such as carbon capture, water quality improvements, natural flood risk management and recreation. Includes the existing network of designated sites and priority habitats, as well as landscape or catchment scale recovery areas where there is coordinated action for species and habitats.

Priority habitats and species: species and habitats of Principal Importance included in the England Biodiversity List published by the Secretary of State under section 41 of the Natural Environment and Rural Communities Act 2006.

Sustainable drainage system (SuDS): an approach to managing surface water run-off from rainfall close to where it falls that replicates natural drainage by slowing and holding back run-off, reducing pressure on existing piped systems and reducing risk of flooding. Where designed as vegetated/green systems, SuDS can help to moderate microclimate, benefit ecology, improve water quality and provide amenity spaces with opportunities for recreation.

Wildlife corridor: linear features that enable migration and dispersal or otherwise act to link habitats in ways that reduce the isolation of wildlife populations.

Appendix 1

Kent Biodiversity Strategy Priority Habitats and Species[94]

Terrestrial

Habitats

- Traditional Orchard
- Brownfield
- Hedgerows
- Lowland Dry Acid Grassland/Lowland Heathland
- Lowland Mixed Broadleaved Woodland
- Lowland Meadow
- Chalk Grassland
- Lowland Beech and Yew Woodland

Species

- Dwarf or Kentish Milkwort
- Heath Fritillary
- Adonis Blue
- Adder
- Swift
- Nightingale
- Turtle Dove
- Shrill Carder Bee

Freshwater and Intertidal

Habitats

- Vegetated Shingle
- Wet Woodland
- Intertidal Mudflats and Coastal Saltmarsh
- Coastal and Floodplain Grazing Marsh
- Ponds
- Chalk Streams
- Rivers

Species

- True Fox-sedge
- Water Vole
- Sandwich Tern
- Lapwing
- European Eel

94 Kent Nature Partnership | Kent Nature

Appendix 2

Data summary

Below is a list of data sources that have been used across this report. The table provides an overview of the which map the data was used for, the features included within that data and the Data creator or owners.

Table 12. Data sources used.

Maps and Report Sections	Feature	Data Creator/Owner
Fig. 4 - National Character Areas	National Character Areas	Natural England
Fig. 6 - Priority Habitats	Priority Habitats	Priority Habitats
Fig. 7 – Designations	Special Areas of Conservation	Natural England
Fig. 12 - Ecological networks	Sites of Special Scientific Interest	Natural England
	Local Wildlife Sites	Kent Wildlife Trust
	Local Nature Reserves	Natural England
	Areas of Outstanding Natural Beauty	Natural England
	Roadside Nature Reserves	Kent Wildlife Trust
	Ancient Woodlands	Natural England
Fig. 8 - Open Spaces **Fig. 13 – GI Network** **Fig. 14 – ANGSt** **Fig. 19 – Council Owned Land** **Fig. 20 - RAG**	Open Spaces inside Tonbridge and Malling	TMBC Managing Development and the Environment Development Plan Document (2010) TMBC OpenSpace consultant natural and semi-natural greenspaces
	Open Space outside Tonbridge and Malling	Ordnance Survey Green Space 2023
Fig. 9 - Blue Infrastructure **Fig. 12 - Ecological networks** **Fig. 13 – GI Network**	Surface water and Rivers	Environment Agency
	Waterbodies	KWT Habitat Master 2022
Fig. 11 - Access Linkage **Fig. 12 - Ecological networks** **Fig. 13 – GI Network** **Fig. 20 - RAG**	Roads	Ordnance Survey
	Railways	Ordnance Survey
	PRoW	Ordnance Survey
	National Cycle network	Ordnance Survey
	Biodiversity Opportunity Areas	Kent Nature Partnership
Fig. 16 – Air Quality and Floodzones **Fig. 17 – BOA and B-lines**	Draft Nature Recovery Network[95]	Kent Wildlife Trust
	Flood zone 2 & 3[96]	Environment Agency

[95] Local Nature Recovery Strategy (LNRS) | Kent Nature

[96] https://www.data.gov.uk/dataset/cf494c44-05cd-4060-a029-35937970c9c6/flood-map-for-planning-rivers-and-sea-flood-zone-

Fig. 18 – Index of Deprivation	Modelled Background Pollution Data[97]	DEFRA
	Air Quality Management Areas[98]	DEFRA
	Open Roads[99]	Ordnance Survey
	National Statistics Index of Multiple Deprivation[100]	National statistics
	B-Lines Maps[101]	Buglife

Data Limitations

1 These datasets vary in scope, resolution, methodology, and update frequency of revisions. The Kent ARCH Survey data layer was created for Kent County Council in 2012, by undertaking on-the-ground surveys to collect data and identify habitats to their Integrated Habitat System Classification (IHS). IHS is the habitat classification system used by the Kent Habitat Survey.[102] KHS designed to be used in the UK, with emphasis on distinguishing areas that correspond to Biodiversity Action Plan (BAP) Broad Habitat Types, priority habitat types and Appendix 1 habitats of the EU Habitats Directive (1992). At the time of its creation, it was the most detailed and accurate data layer available for Kent. However, land uses may have changed since 2012, so to confirm the most accurate known land cover type, it has been cross-referenced with the other more recent datasets to determine the most accurate known habitat for each parcel. Professional ecological expertise has been used to interpret the data and make a judgement to determine the most appropriate classification.

Limitations to the RAG analysis

2 It is important that red sites are not overlooked as these may have significance to a local community that has little access to green spaces elsewhere or may hold importance for providing a particular ecosystem service. Although they may provide limited opportunity to provide multiple options, they may be very well suited to one or two services. Some examples of red sites might be:

- A site near a motorway that intersects with B-Lines and Air Quality modelling which could provide an excellent wildlife haven for pollinators and air quality buffer for local villages.

[97] https://uk-air.defra.gov.uk/data/pcm-data

[98] Air Quality Management Areas (AQMAs) - Defra, UK

[99] https://osdatahub.os.uk/downloads/open/OpenRoads

[100] https://www.gov.uk/government/statistics/english-indices-of-deprivation-2019

[101] https://www.buglife.org.uk/our-work/b-lines/b-lines-guidance/downloadable-b-lines-maps/

[102] Assessing Regional Habitat Change (ARCH) - Kent County Council

- A small local playground area under 0.5 ha that can also act as a swale and drainage system to prevent flooding of a housing estate.

3 It is also important to look beyond the full RAG analysis of each site and consider the individual scores for each ecosystem service.

4 This study is explicitly a desktop exercise, and its purpose is to provide indicative data to inform further plans where more detailed on the ground surveys will be required. The results set out in the following section should be read with an understanding of the following limitations and assumptions:

- Habitat type – habitat type can only be verified through on the ground surveys. The best available data has been used to identify the most likely habitat type, however there is potential that site surveys could lead to an alteration in classification.
- Habitat condition – it is not possible to verify or estimate habitat condition from desktop sources. For the purposes of the BNG metric 4.0 part of this study all habitats have therefore had a condition assessment rating of Moderate applied to them, as per the Precautionary Approach (CIEEM, 2018).
- Ecosystem Services – The capacity of a site to provide a particular service can only be fully determined by ground surveys and tests, particularly air quality and flood prevention. The layers used presume no knowledge of a site's existing ability to provide ecosystem services. these services or others.
- Nature Recovery Network – This dataset is a draft, not yet finalised and fully agreed by all stakeholders. Therefore, it should be expected that changes may occur as to whether a site falls in the NRN core and recovery zones. However, at time of writing this is the best option for determining the best areas for nature enhancement. Although permission has been given by KWT to use this layer for analysis purposes, as it has not been formalised by DEFRA it cannot be used or published in any mapping.
- Operational constraints – it has generally been assumed no operational constraints in assessing habitat creation and enhancement potential, though it is accepted that land owned by TMBC is subject to a range of competing demands and requirements which it has not been possible to factor into this study.
- Site Filtering – although very small and urban sites have been filtered out of this assessment, their capacity to provide small scale GI through street trees, road verge nature reserves should not be overlooked. Small pockets of green space in urban environments can be considered as a mosaic, creating a larger green space.
- Large Site Bias – larger sites are more likely to intersect with the layers chosen in the analysis and therefore likely to score higher than smaller sites. This should be taken into consideration when considering the results.