

Natural Woking

Biodiversity and Green Infrastructure Strategy

Supporting Information



Peregrine falcon, Woking (James Sellen)

Woking Borough Council, March 2016, www.woking.gov.uk

For more information contact greeninfrastructure@woking.gov.uk



Contents

Appendix 1 – Green infrastructure categories	4
Appendix 2 - Benefits of Biodiversity and Green Infrastructure.....	11
Appendix 3 - The Bigger Picture	16
Appendix 4 - Baseline	24
Appendix 5 – Completed and Current Improvements	57
Appendix 6 - Glossary and Abbreviations.....	64
Appendix 7 – References and Where to find out more	70
Appendix 8 - What you can do	82
Appendix 9 - Favourable Conservation Status	117
Appendix 10 - Great Crested Newt.....	118

This Supporting Information document provides more detail and guidance to deliver the aims of the Natural Woking Strategy.

You can read the Natural Woking Strategy at
www.woking.gov.uk/environment/greeninf/naturalwoking

Maps

Map 1	Aerial Map of Woking Borough	25
Map 2	Existing green infrastructure in Woking Borough	26
	Electoral ward boundaries in Woking Borough from May 2016	35
Map 3	Local Nature Reserves (LNR) in Woking Borough	36
Map 4	Existing footpaths and cycle ways in Woking Borough	37
Map 5	Existing trees with Tree Preservation Order (TPO) in Woking Borough	38
Map 6	Sites of Special Scientific Interest (SSSI) in Woking Borough.....	39
Map 7	Suitable Alternative Natural Greenspace (SANG) in Woking Borough.....	40
Map 8	Special Protection Area (SPA) in Woking Borough.....	41
Map 9	Areas of Common Land in Woking Borough.....	42
Map 10	Registered Historic Parks and Gardens in Woking Borough.....	43
Map 11	Blue infrastructure in Woking Borough	44
Map 12	Ancient woodland and other woodlands in Woking Borough.....	45
Map 13	Parks, gardens, outdoor sports and amenity greenspace in Woking Borough ...	46
Map 14	Allotments in Woking Borough.....	47
Map 15	Cemeteries and churchyards in Woking Borough	48
Map 16	Sites of Nature Conservation Importance (SNCI) in Woking Borough.....	49
Map 17	Verges in Woking Borough.....	50
Map 18	Special Areas of Conservation (SAC) in Woking Borough	51
Map 19	Broad indication of distribution of new housing in Woking Borough up to 2027 .	52
Map 20	Distribution of Allotments in the Borough and an 800m buffer	53
Map 21	Distribution of Parks and Outdoor Sports and an 800m buffer	54
Map 22	Distribution of Play Areas and a 400m buffer.....	55
Map 23	Distribution of the existing SANGs and their catchment areas	56
Map 24	Green infrastructure opportunity areas within the Borough	115
Map 25	Biodiversity opportunity areas within Woking Borough.....	116

Appendix 1 – Green infrastructure categories

This section explains more about the six green infrastructure:

- Biodiversity – ecology
- Open Space and Recreation
- Open countryside - Green Belt
- Blue infrastructure
- Food/crop growing
- Landscape



Four-spotted Chaser (James Sellen)

Biodiversity – ecology

Nowhere in the urban area of the Borough is more than 1 mile from open countryside¹. This provides our population with a great opportunity to enjoy and benefit from the use of the Borough's green spaces for sport, recreation and social interaction and the benefits this can bring to health and well-being. Woking Borough Council has an abundance of leisure and cultural opportunities for residents and visitors to enjoy. Getting out and about and enjoying our local amenities can help contribute to a healthy lifestyle.

Woking is a Borough of contrast: from the hustle and bustle of the thriving town centre to the green open spaces of Horsell Common. As well as the diversity of green spaces that the Borough has to offer, Woking Borough's urban area accounts for some 40% of the Borough, and there are many opportunities to enhance the biodiversity value of the open spaces which fall within this urban area. The relationship between the Town Centre, surrounding villages and the countryside beyond is of crucial importance in determining the quality of life for residents and visitors in the Borough. Connecting people to green and open spaces is a key aspect of this Strategy.

The Basingstoke Canal and the Hoe Stream pass through the urban area and bring with them many of the qualities experienced elsewhere in the wider countryside. Trees and woodlands play a key role in enhancing the landscape settlement of much of the built environment and, in common with hedgerows, ponds and watercourses, provide essential habitats for wildlife to exist within the urban area. They can create a rich and varied mosaic of habitats supporting a wide range of biodiversity. Open spaces within the urban area serve a wide range of uses as places for recreation, visual relief to the built environment, biodiversity reserves and corridors for the movement of wildlife from one area of countryside to another. Vegetation, especially trees, also contributes to the quality of the urban environment by buffering against extremes of temperature, providing screening and creating privacy, reducing atmospheric carbon dioxide levels and replenishing oxygen.

The variety of different land uses found in close proximity can create a rich and varied mosaic of habitats. Green spaces within the urban area including parks, amenity grassland, common land, sports fields and verges can, depending on their structure, management and species present, support a large number of invertebrate and bird species within the town and its suburbs.

¹ Cultural Strategy (Woking Borough Council, 2004)

Many sites including the more urban areas of the Hoe Valley, have direct links with sites of high ecological value such as Mayford Meadows and White Rose Lane Local Nature Reserves (LNR) and therefore act as key wildlife corridors enabling the dispersal and migration of many species of flora and fauna and, in so doing, bring wildlife into the town.

Trees and gardens within the urban area offer many opportunities for wildlife and the planting of native species can further increase the species richness and diversity of plants and animals supported.

The conservation of biodiversity is a key test of sustainable development and a crucial measure of the quality of the local environment is the wildlife which it supports. Unfortunately the world is losing biodiversity at an ever increasing rate as a result of many factors including human activity and changes in climate. If appropriate action is not taken, we will suffer both economic and environmental loss and pass on to future generations a world that is considerably poorer than the one we are privileged to live in today. Alternatively, by working together we can pass onto future generations an environment capable of sustaining a richer variety of habitats and species than is supported at present.

Local authorities (councils) have a statutory duty to ensure the protection and enhancement of biodiversity. The National Planning Policy Framework (NPPF) also places great emphasis on how planning should contribute to the protection and enhancement of the natural environment. The idea is not merely to prevent loss but to enhance biodiversity through the creation of ecological networks. Fragmented and isolated habitats are vulnerable in the long term, if habitats are stranded; there is a risk of them deteriorating or being lost over time. For declining species this could mean a whole population (flora or fauna) being wiped out entirely.

Habitat fragmentation is mainly attributed to development and the change of land use over time. Development pressures include housing, employment and grey infrastructure such as roads. Habitats are steadily becoming more detached as pressures continue for new development. The creation of ecological corridors ensures that wildlife populations may naturally migrate and colonise wider areas.

Open Space and Recreation

The provision of open space and recreation that meets the needs of the local community is fundamental to sustainable growth in Woking Borough. Outdoor green space and recreational facilities encourage outdoor activity and can have positive mental and physical benefits for the local community. Provision should be adequately distributed relative to the population, so that facilities are reasonably accessible to most of the Borough's residents.

The Borough is predicted to grow significantly in the next 10-15 years. Planned growth includes 4964 new homes by 2027. Official population projections² suggest that the population may grow by over 10,000 people between 2012 and 2027, approximately a 10% increase to the existing population. As such adequate provision is required to meet the

² ONS 2008-based Subnational Population projections - used for the Core Strategy

growing needs. The Council has set standards to ensure this in new development (see Appendix 4 of the Core Strategy).

Key findings of the Open Space, Sports and Recreation Facilities Audit (2008) were:

- Most areas are covered by at least one park or open space with the exception of the Mount Hermon East (see maps in Appendix 4 Baseline).
- There is an uneven distribution of allotments within the Borough - although some areas will have a surplus of demand for plots (Byfleet and Maybury) and some areas have long waiting lists (West Byfleet, Horsell) (see maps in Appendix 3).
- Most areas are in good proximity to natural and semi natural open space or areas of accessible countryside (see maps in Appendix 4 Baseline).
- The distribution of cemeteries is uneven in the Borough it is adequate and some, such as Brookwood Cemetery are enjoyed by local residents for walking.
- The Brookwood, Pyrford, and Horsell East and Woodham areas have the most amount of open space (in total making up 55% of the open space in the Borough). Goldsworth West and Mount Hermon West areas have the least.
- Golf courses make up a significant amount of open space in the Borough.
- There is a deficit of between 15.2-33.5 ha of outdoor sports facilities; and deficit of between 6.9-25.2 ha of Children's Play Space.



Goldsworth Park play area (WBC)



Knaphill Allotments (Cliff Bolton)

The earlier Green Spaces Development Plan identified the Borough's shortfall and where improvements needed to be made. Some enhancements followed, such as improvements to play areas, sports pitches and other park recreation facilities. The Playing Pitch Strategy Review (2012) updated the Playing Pitch Strategy (2006). It provided an action plan and a tool to guide future investment. The Strategy set out local standards which were used to inform the Core Strategy Open Space standards (see Appendix 4 of the Core Strategy). The Council is currently updating this information.

The Woking Local Transport Strategy identifies gaps in walking and cycling infrastructure as one of the main transport problems within the Borough, particularly at boundaries between Woking Borough and surrounding districts and Boroughs (such as Elmbridge, Guildford and Runnymede). The Cycle Woking Programme delivered 26.31km of new off road cycle network in the period between 2008-2011, 12.9km along the Basingstoke Canal. The

programme focussed on the Town Centre and railway stations as the “hubs”. This has led to a 60% increase in the number of dedicated cycle facilities and 1155 new cycle parking spaces created in Woking Borough since 2008.

The NPPF places great emphasis on how planning should contribute to the protection and enhancement of the natural environment. The idea is not merely to prevent loss but to enhance biodiversity through the creation of ecological networks. Fragmented and isolated habitats are vulnerable in the long term, if habitats are stranded; there is a risk of them deteriorating or being lost over time. And for declining species this could mean a whole population (flora or fauna) being wiped out entirely.

Development pressures include housing, employment and grey infrastructure such as roads. Habitats are steadily becoming more detached as pressures continue for new development. The creation of ecological corridors ensures that wildlife populations may naturally migrate and colonise wider areas.

Open countryside - Green Belt

The Green Belt comprises numerous green infrastructure elements and uses. As stated in paragraph 80 of the NPPF, the Green Belt is a planning tool that serves five main purposes:

- To check the unrestricted sprawl of large built-up areas
- To prevent neighbouring towns merging into one another
- To assist in safeguarding the countryside from further encroachment
- To preserve the setting and special character of historic towns; and
- To assist in urban regeneration, by encouraging the recycling of derelict and other urban land.

Not all land designated as Green Belt land is by definition green, for example some villages, which include various buildings and grey infrastructure, can be entirely washed over by the Green Belt. An example in Woking Borough is Mayford. The Green Belt designation means that the area is protected from inappropriate development. The NPPF emphasises the potential to maximise the use of Green Belt land. So the land is far more than a landscape buffer, it serves multiple uses. Paragraph 81 states that: *‘Once Green Belts have been defined, local planning authorities should plan positively to enhance the beneficial use of the Green Belt, such as looking for opportunities to provide access; to provide opportunities for outdoor sports and recreation; to retain and enhance landscapes, visual amenity and biodiversity; or to improve damaged or derelict land’.*



Tree canopy (WBC)



Horsell Common (WBC)

Blue Infrastructure

There are five main water channels in the Borough, the River Wey, Hoe Stream, the Basingstoke Canal, the River Bourne and The Wey Navigation. These are important wildlife corridors and recreational assets.

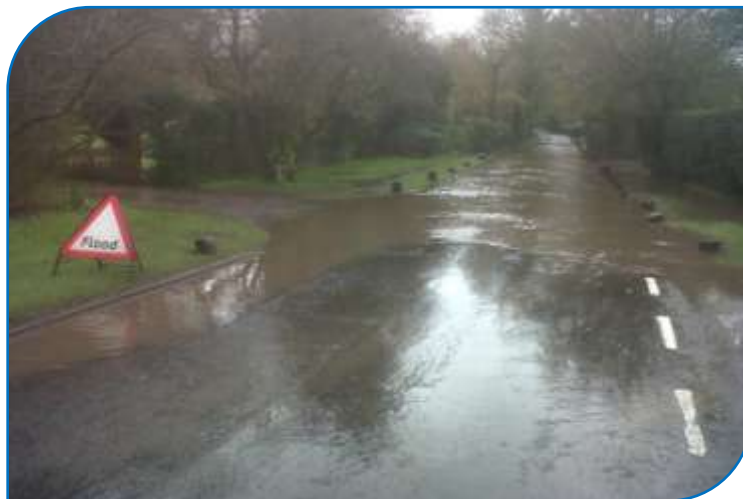
The Basingstoke Canal runs 12 miles east to west through Woking Borough and is owned and managed by the Basingstoke Canal Authority. It passes alongside the Town Centre providing an important amenity space here. The Canal is designated as a Site of Special Scientific Interest (SSSI), due to its aquatic plants and invertebrates, particularly dragonflies. Surveys undertaken by Natural England suggest that parts of Basingstoke Canal within Woking Borough are in “unfavourable/no change” condition. This means that the area will not reach “favourable” condition unless improvements are made to site management or external pressures.

The River Wey runs approximately 9 miles along the southern and south-eastern parts of the Borough. The navigable elements of the River Wey, the Wey Navigation, is owned and managed by the National Trust. The Council will work with the National Trust to maintain and improve existing access. Other blue infrastructure resources include ponds and lakes, such as those in Goldsworth Park, McLaren Park and Heather Farm.

The Open Space, Sports and Recreation Facilities Audit (2008) found that improvements and better management of these areas could potentially increase the use of them.

Blue infrastructure is a valuable resource and has numerous benefits. However blue infrastructure poses its own risk, flooding.

Two main sources of flooding in Woking Borough are from rivers and watercourses overtopping their banks or from surface water not draining away quick enough during periods of heavy and prolonged rainfall. Flooding problems have been frequent across the country in recent years. The most recent floods occurred during December 2013 and the early months of 2014. Woking Borough experienced problems in Byfleet, Old Woking and Maybury areas. The recently completed Hoe Valley flood defences assisted in protecting homes previously affected.



Carthouse Lane, Knaphill (WBC)

The Council’s flooding and drainage team work with the Environment Agency to deliver flood alleviation schemes and also to explore opportunities for natural flood risk management (for example, reconnecting the river with its floodplain).

It is important to reduce the risk of flooding within the Borough. These incidents can be very disruptive and costly to local residents; and create severe stresses upon people’s lives and the local infrastructure.

The Hoe Stream, The River Wey and The Bourne are all classified as 'Moderate' for both chemical and ecological status and are yet to achieve 'Good' Status.

Food/Crop Growing

Soil is the main medium in which most green infrastructure assets are grown. The protection of soil is important to safeguard future ability to grow food/crops and vegetation.

In general most crops are grown in soil³. Soil is finite and government policy seeks to protect this valuable resource. There is a countrywide strategy for soil protection called the Safeguarding our Soils: A Strategy for England and references is also made in the NPPF (paragraphs 109 and 143).

Soil contains living organisms, and is thriving with all types of life and has a variety of biological properties. A hectare of topsoil can contain 5 tonnes of living organisms – it can take up to 500 years to produce just 2cm of this.

The ability to grow crops within the Borough is very much determined by the fertility and quality of the soil within various parts of the Borough. Food and crop growing can be a business or a pastime. Therefore there are multiple benefits, including economic and social that support the case to preserve the existing highest quality ('best and most versatile agricultural land') and to promote more food/crop growing opportunities.

Landscape

Green infrastructure makes a positive contribution to the appearance of the local landscape and character of the Borough. Various case studies have demonstrated the positive role green infrastructure can make to the health and well being of the community and in turn positive economic benefits. Woking Borough has various landscape types and green features that make a positive contribution to its character, for example landscape features such as escarpments at Hook Heath, Pyrford and Knaphill.

The high quality of Woking Borough's landscape makes a positive impression on people who visit the Borough. The lush landscape that surrounds the Borough demonstrates to visitors and residents that the Borough's environment and landscapes are cared for and valued. This can in turn lead to further investment.

Green infrastructure elements are in abundance on the outer boundaries of the Borough and we should seek more opportunities to ensure the green features permeate through to our inner urban core. At times, the difference between the outskirts and the central areas in the amount of green elements can appear stark.

We have the opportunity to enliven our urban centres with green, through protection of the most valuable existing green infrastructure, provision of new and through retrofitting. The Surrey Landscape Character Assessment reviews the regional character areas in Surrey of which Woking Borough falls mainly within the Thames Basin Heaths area, which is generally low lying with gentle undulations in the landform. The heathland has declined over time, being overtaken by woodlands. The remaining area of heathland is now of significant

³ Other unconventional methods include hydroponic, which is a method of growing plants in mineral enriched water - no soil is used.

importance for nature conservation. Most of this being protected through statutory designations. The assessment then breaks the general character area further into 25 character types including farmed land, heathland, parkland and urban fringes. Most of these types are found within the Borough. A description of these, the issues and guidelines for conservation and enhancement are contained in individual sections of the assessment.

Appendix 2 - Benefits of Biodiversity and Green Infrastructure

Key Benefit	Environmental	Biological	Human	Economic	Description
Enhancing the built environment	✓		✓		<p>Providing beauty and visual relief to the urban environment.</p> <p>Providing essential habitats for wildlife to exist within the urban area.</p> <p>Green corridors provide a route for sustainable modes of travel.</p> <p>The green character of a town can help make it simply a pleasant social place to live by creating distinct neighbourhoods (<i>Landscape Institute Public Health and Landscape: Creating Healthy Places</i>).</p>
Water management and reducing flood risk	✓		✓		<p>Mitigating the effect of 'grey' (concrete etc.) infrastructure in urban environments that can constrain natural drainage and reducing surface water runoff.</p> <p>Trees play a valuable role in surface water reduction absorbing 50 to 100 gallons of water per day depending on the size and species of the tree.</p> <p>SuDS help to mitigate against flooding but can also introduce water into the landscape to create aesthetically pleasing landscape features.</p> <p>Blue infrastructure brings multiple benefits including water provision and flood protection.</p>

Key Benefit	Environmental	Biological	Human	Economic	Description
Soils formation and protection.	✓				<p>Soil is a valuable resource, providing a number of functions including: food and fibre production; support of ecological habitats and biodiversity; support for the landscape; providing a platform for construction and raw materials. It is also fundamental to the provision of gardens and green space⁴.</p> <p>Healthy soils are vital for nutrient storage and recycling.</p>
Strong ecosystems	✓	✓		✓	<p>Multifunctional green infrastructure assets allow for a variety of species to thrive. A strong and resilient ecosystem is more resistant to infectious diseases and can recover from disaster more effectively. It also results in breeding stocks and population reserves benefiting the future of species, habitats and resources. A resilient and biodiverse ecosystem also offers valuable 'insurance' and security in mitigating the economic impacts of a changing climate. A rich and varied mosaic of habitats can support a wide range of biodiversity and therefore enhance biodiversity. Tackling invasive species and reintroducing lost species strengthens local biodiversity.</p> <p>Green spaces can serve as corridors for the movement of wildlife from one area to another, supporting population growth, dispersal and migration of species of flora and fauna (ecological corridors). Gardens make up 25 per cent of most cities and can also act as corridors within the urban environment (<i>Wildlife of a Garden, Jennifer Owens, 2010</i>).</p> <p>A healthy and biodiverse ecosystem underpins many sectors such as agriculture, fishing and forestry. For example, plants and microbes can help degrade chemical pollutants and organic waste while pollinators such as bees help to add diversity and productivity to food crops.</p>

⁴ https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/69308/pb13298-code-of-practice-090910.pdf

Key Benefit	Environmental	Biological	Human	Economic	Description
Adaptation to changes in climate	✓			✓	<p>The natural cooling properties of green infrastructure in an urban environment can reduce the urban heat island effect and assist in reducing energy consumption by sheltering buildings from direct sunlight through passive cooling⁵.</p> <p>Vegetation, especially trees, can buffer against extremes of temperature, providing screening, reducing atmospheric carbon dioxide levels and replenishing oxygen.</p>
Resource production	✓	✓			<p>Vegetation is increasingly being used as a source of sustainable energy production. Various forms of plant matter (or even animal derived matter) can be converted into biofuel, for example tree branches, crops, wood chippings.</p> <p>Food and energy production. Fertile land enables existing and future crop production as well as economic growth promoting jobs and self sufficiency in the local community.</p> <p>Many plant species can contribute significantly to industry such as the pharmaceutical and food / beverage markets. The benefits are impacted by the diversity and extent of biological resources.</p>
Science		✓	✓	✓	<p>Many species can be used for medicinal resources and pharmaceutical drugs.</p> <p>Biodiversity is a great area of research and education.</p>

⁵ Adapting cities for climate change: The Role of the Green Infrastructure (Gill et al)

Key Benefit	Environmental	Biological	Human	Economic	Description
Recreation and tourism			✓		<p>Access to green spaces benefits sport, recreation and social interaction.</p> <p>Ecotourism – biodiversity and green infrastructure can be a source of economic wealth. Nature reserves, parks and forests provide a platform for recreational activity which can provide a source of tourism and economic benefit.</p>
Health, well-being and quality of life.	✓		✓	✓	<p>Pollution breakdown and absorption - green infrastructure can help to improve air quality by absorbing gaseous pollutants, such as CO2 emissions and other particulate matter. In December 2014, the Government's Environmental Audit Committee estimated that 29,000 deaths annually in the UK can be attributed to air pollution. The report says traffic is responsible for 42% of carbon monoxide, 46% nitrogen oxides and 26% of particulate matter pollution. Many species of trees and plants are able to absorb these particulates. For instance, the canopy of a European Lime tree can have the capacity of holding about six ounces of pollution particulates emitted from car engines.</p> <p>Improved air quality can in turn have positive health benefits such as improved childhood asthma.</p> <p>Connecting with nature and taking part in outdoor activities improves people's mental well being as well as physical health⁶.</p> <p>Growing your own and gardening is a valued pastime and can help to encourage outdoors activity, contributing to the health and wellbeing of local residents.</p> <p>Blue infrastructure brings multiple benefits including angling, boating and general recreation.</p>

⁶ Green Infrastructure Guidance (Natural England, 2009)

Key Benefit	Environmental	Biological	Human	Economic	Description
Economic importance				✓	Increasingly the economic value of biodiversity and green infrastructure ('natural capital') are being recognised and attempts made to quantify these.
Growth and development			✓	✓	<p>Provision of green infrastructure assets can be a catalyst for growth, having a positive impact on the appearance and aesthetics of an area, leading to increased use and possible further investment⁷. In the United States, the High Line project in New York, which was located in a declining area is considered to have contributed to a 103% increase in property prices in the area⁸</p> <p>Green infrastructure including habitat creation and connections are important components of good development planning, minimising impacts on and where possible delivering net gains for biodiversity, in line with national planning policies.</p> <p>Integrated green infrastructure can prove valuable in connecting people to places and in turn to employment opportunities and retail as well as other socio-economic benefits.</p>

⁷ Green Infrastructure: An integrated approach to land use (Landscape Institute, 2013)

⁸ Green Infrastructure's contribution to economic growth: a review (Defra and Natural England, 2013)

Appendix 3 - The Bigger Picture

This section highlights a number of key laws, policies and processes surrounding this strategy. These safeguards are already in place helping us to protect biodiversity, in particular when development is proposed on or near protected habitats.

Comments

There are a number of consistent themes running through the following key documents that are relevant to biodiversity and green spaces. These can be summarised as follows:

- At a strategic level, the need to be able to cope with existing and future demands for green space and outdoor recreational facilities and the ability to respond to issues such as climate change.
- The need to ensure that there is good access to locally based green space and outdoor recreation facilities which can support both casual use and organised programmes of activity for residents and for those who visit or work in the Borough;
- The need to provide opportunities for individuals and organisations to take part in activities which develop personal health and well being, encourage community spirit, provide for life-long learning and promote Woking Borough as an attractive place;
- The need for quality standards which provide for a clean, healthy and safe environment and ensure that recreational facilities meet the standards expected by the community for formal and informal activity;

The protection and enhancement of the environment including landscapes, wildlife habitats and sites of cultural interest. Importantly, at the same time the ability to balance these needs against the needs for development for more formal recreational provision.



Tree canopy (WBC)



Insect hotel, Bromley (WBC)

International

The Convention of Biological Diversity and Nagoya Agreement

The Convention (1992) is a commitment to the conservation of the natural environment and biological diversity. The UK endorsed the Convention of Biological Diversity in 1994.

Nagoya Agreement

In 2010 a new agreement was signed in Nagoya, Japan, that commits signatories to taking effective and urgent action to stop the loss of habitats and species by 2020. Over 190 countries around the world, including the UK, agreed to take urgent action to halt the loss of biodiversity, recognising how important our wildlife and ecosystems are for sustaining a healthy planet and for delivering essential benefits for people.

European

European Directives

There are a number of European Union Directives which aim to protect and enhance our natural environment covering water, habitat and species.

Water Framework Directive

The Water Framework Directive (WFD) is a piece of EU legislation that requires member states to make plans to protect and improve the water environment.

Issues of water quality and water supply are key to enhancing the quality of our environment and well-being. This Directive (2000, implemented into law in the UK in 2003) commits EU member states to achieve good qualitative and quantitative status of all water bodies - including marine waters up to one nautical mile from shore - by 2027. It prescribes steps to reach the common goal. It sets objectives for water protection in particular around achieving cleaner rivers and lakes, groundwater and coastal beaches. It is a major driver for achieving sustainable management of water in the UK and other European member states. It applies to surface freshwater bodies, including lakes, streams, rivers and canals, transitional water bodies such as estuaries, ground waters and coastal waters.

The four main aims of the Water Framework Directive are to:

- Improve and protect inland and coastal waters
- Drive wiser, sustainable use of water as a natural resource
- Create better habitats for wildlife that lives in and around water
- Create a better quality of life for everyone.

The Directive provides an overarching framework for river basin management to:

- Prevent deterioration in the status of surface waters and groundwater
- Achieve 'Protected Area' Objectives and Standards
- Aim to achieve good status for all water bodies; and
- Aim to achieve good ecological potential and good surface water chemical status for artificial and heavily modified waterbodies.

Key criteria assessed include:

- Setting environmental quality objectives for surface waters and groundwaters.
- Identifying in detail the characteristics of the river basin district, including the environmental impact of human activity.
- Assessing the present water quality in the river basin district.
- Analysing significant water quality management issues.
- Identifying pollution control measures.
- Implementing the agreed control measures, monitoring the improvements in water quality and reviewing progress and revising water management plans to achieve the quality objectives.

The Environment Agency is the lead competent authority for implementing the Directive in England and seeks opportunities to improve the ecological status or potential of water bodies through the planning process. The Wey Landscape Partnership is also part of the Catchment Based Approach to deliver the Directive's objectives in the Wey catchment.

European Landscape Convention

This Convention (2000) commits signatories of the treaty (UK in 2006) to establishing and implementing policies on landscape issues. Countries must identify and protect certain landscapes.

National

Biodiversity 2020: A strategy for England's wildlife and ecosystem services

The UK Government is taking action to secure the future and value of our natural environment and has committed to moving from net biodiversity loss to net gain in a natural environment White Paper and the publication (in 2011) of its Biodiversity 2020 Strategy.

Natural Environment and Rural Communities Act

The 2006 NERC Act places a statutory duty on all public authorities to have regard to conserving biodiversity and emphasises the important role they play.

Making Space for Nature

This 2010 report outlines the state of biodiversity in this country. There has been a significant decline of wildlife in England since the Second World War, in part due to changes in land use and the loss of habitats. The report recognises the importance of statutory designations of certain landscapes, such as SSSIs, and the contribution they make to protecting habitats. However it observes that habitats are becoming increasingly fragmented and isolated, leading to a decline in the creation of ecosystems and losses in species population, concluding that the fragmented network will not be sustainable or resilient to future challenges.

The reports recommendations are summed up in four words *More, bigger, better and joined*. It recommends enhancement of the quality of and extending existing sites and the creation of new site, and increasing and enhancing connectivity of habitats to create ecosystems and reduce the risk of regional extinction.

Biodiversity Strategy for England 2020

This ambitious strategy (2011) sets out the strategic direction for biodiversity policy for the next decade on land (including rivers and lakes) and at sea. It guides efforts to deliver outcomes set out in the Nagoya agreement. Four action points were identified:

1. An integrated overarching approach;
2. Putting people at the heart of biodiversity policy;
3. Reducing environmental pressure; and
4. Improving knowledge.

Natural Environment White Paper - The Natural Choice: securing the value of nature

This White Paper (2011) – the first natural environment White Paper in 20 years - set out the coalition Government's priorities for the natural environment, to meet its EU and international commitments and to protect the crucial role ecosystems and biodiversity play in our wellbeing and economic prosperity.

The White Paper commits to reversing the historic decline of the natural environment – moving from net biodiversity loss to net gain.

It highlights the benefits of the natural environment, and the link between a flourishing natural environment leading to healthy communities and prosperous economy. The paper sets out a vision of strengthening these links and promotes various actions to be implemented to improve the quality of our natural environment. It supports the creation of networks to join up our increasingly fragmented and fragile habitats.

National Planning Policy Framework

The NPPF (2012) sets out national planning policy to achieve sustainable development. Sustainable development comprises of three dimensions - social, economic and environmental. The NPPF states that planning should contribute to the protection and enhancement of the natural environment including improving biodiversity, mitigating and adapting to climate change, moving to low carbon economy, providing opportunities and improving access to outdoor open space and recreation.

The NPPF requires specifically local planning authorities to:

- set out a strategic approach in their local plans to plan positively for the creation, protection, enhancement and management of networks of biodiversity and green infrastructure (paragraph 114)

The planning system should contribute to and enhance the natural and local environment by:

- protect and enhance valued landscapes, geological conservation interest and soils;
- recognise the wider benefits of ecosystem services;
- minimise impacts on biodiversity and providing net gains in biodiversity where possible, contributing to the Government's commitment to halt the overall decline in biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures;
- prevent both new and existing development from contributing to or being put at unacceptable risk from, or being adversely affected by unacceptable levels of soil, air, water or noise pollution or land instability;
- remediate and mitigate despoiled, degraded, derelict, contaminated and unstable land, where appropriate (paragraph 109).

A Community Right to Beauty: giving communities the power to shape, enhance and create beautiful places, spaces and development

This paper by think tank ResPublica (2015) argues that enshrining the community right to beauty through changes to the Localism Act, the planning system and financial incentives would reflect community sentiment, help to address existing environmental injustices, revive local economies and improve health and wellbeing.

Regional

South East Plan

Whilst the South East Plan (2009) was withdrawn on 14 February 2013, certain policies are retained including Policy NRM6 regarding protection of the Thames Basin Heaths SPA from the adverse effects on the habitat caused by new residential development.

Local

Thames River Basin Management Plan (RBMP)

The Thames River Basin Management Plan (RBMP) is prepared under, and identifies the necessary actions to comply with, the Water Framework Directive. River Basin Management Plans are reviewed and updated on a six year cycle as follows: 2009, 2015, 2021 and 2027. The Thames RBMP focuses on the protection, improvement and sustainable use of the water environment and sets out the pressures each river basin is facing and the baseline position for water bodies.

Former Surrey Biodiversity Action Plan

This plan identified key habitats within Surrey and provided individual Habitat Action Plans (HAPs) for each. These include Chalk Grassland, Heathland, Woodland, lowland unimproved neutral and acid grassland, wetland, agricultural land and wet meadows.

Naturally Richer

This 2015 publication is a first step towards a natural capital investment strategy for Surrey, which recognises the economic value of the biodiversity and green infrastructure around us.

Woking 2027 Core Strategy

The Core Strategy (2012) provides a spatial vision for the Borough and strategic objectives focussed on the key issues and challenges facing the area. It sets out the Council's vision for high environmental standards and a greener Borough with interconnected green spaces.

[Policy CS7 Biodiversity and nature conservation](#) requires development proposals to contribute to the enhancement of existing biodiversity and geodiversity features and also explore opportunities to create and manage new ones where it is appropriate. This includes those habitats and species in the Surrey Biodiversity Action Plan (BAP). Any development that will be anticipated to have a potentially harmful effect or lead to a loss of features of interest for biodiversity will be refused.

Particular consideration will be given to the following hierarchy of important sites and habitats in the Borough:

- 1) European - Special Protection Areas (SPA) and Special Areas of Conservation (SAC)
- 2) National – SSSI and National Nature Reserves (NNR)
- Local – SNCI, LNRs, and other Ancient Woodland not included in 1 and 2 above.

Policy CS7 also encourages new development to make a positive contribution to biodiversity through the creation of green spaces and linkages between sites to create a local and regional biodiversity network of wildlife corridors and green infrastructure. It will seek to retain and encourage the enhancement of significant features of nature conservation value on development sites.

[Policy CS16 infrastructure delivery](#) explains the Council will work in partnership with infrastructure service providers and developers to ensure that the infrastructure needed to support development is provided in a timely manner to meet the needs of the community. Infrastructure is defined as including green infrastructure, flood alleviation measures, and social and community infrastructure such as sports centres, open spaces, parks and play space.

[Policy CS17 open space, green infrastructure, sport and recreation](#) is the strategic policy for green infrastructure within Woking Borough. All development proposals will need to contribute to green infrastructure provision. The Council will encourage improvement and enhancement of existing green infrastructure, particularly the protection and enhancement of physical access and rights of ways.

[Policy CS22 Sustainable Construction](#) requires development to meet the relevant components of the Code for Sustainable Homes or, for larger non-residential development, comply with BREEAM standards. The Code measures the sustainability of a home against nine design categories, rating the 'whole home' as a complete package. The design categories are:

- Energy and CO₂ Emissions
- Water
- Materials
- Surface Water Run-off
- Waste
- Pollution
- Health and Wellbeing
- Management
- Ecology

CS22 confirms: *'Ecology and biodiversity – all development is encouraged to make biodiversity enhancements such as green roofs and bird and bat boxes. All new residential development is encouraged to meet the 'ecology' elements of the Code'*. Following a Ministerial Written Statement to Parliament on 25 March 2015, the Council amended the approach it takes to implementing CS22. The Government statement said that councils could not locally set additional local technical standards or requirements relating to the construction, internal layout or performance of new dwellings (including the Code for Sustainable Homes to be achieved by new development). In terms of energy performance standards, changes will be forthcoming through commencement of amendments to the Planning and Energy Act 2008 in the Deregulation Bill 2015 (this is expected to happen alongside the introduction of Zero Carbon Homes policy in late 2016). Until then the

Government's intention should be taken into account, which is to apply existing policies and not set conditions with requirements above a Code Level 4 equivalent.

On this basis, the Council will not attach conditions requiring Code Level 5 or its equivalent on greenfield sites. It will however, attach the following condition, which seeks the equivalent water and energy improvements of the former Code Level 4, on all new residential permissions.

Whilst no longer mandatory, the Council continues to encourage new development to meet the other requirements of Code Level 4, including the ecology components.

Full details of this interim arrangement for sustainable construction are available at www.woking.gov.uk/planning/service/energy

Woking 2050

Woking 2050 provides an overarching vision to coordinate efforts to create a sustainable Borough by reducing our impact on the environment. It takes a look at our whole way of living and how it influences our environment. Woking 2050 is the follow up Strategy to the Council's Climate Change Strategy (2008-2013) and was published in September 2015.

Theme 4 The Great Outdoors promotes and celebrates our diverse countryside and urban environments. It seeks to enhance accessibility to our natural habitats and wildlife and promote the benefits that enjoying the great outdoors can bring including to health and well-being. The Strategy also recognises the need to ensure biodiversity security and protection so that future generations can benefit.

Conservation strategies for specific species/habitats

Local conservation strategies will be prepared for individual priority species and their habitats, following the model of Natural England's Woking Favourable Conservation Status initiative (see Appendix 9 onwards). This will be on a phased basis; the first concerns Great Crested Newts). These will provide a description of the current status of the species at a landscape scale and identify how it can be maintained and improved in the long-term alongside future development. For more information see Appendix 9 and 10.

Neighbourhood Plans

The NPPF allows for local communities to designate Local Green Space (paragraph 76-77). This could make a contribution to green infrastructure and biodiversity and the Council will work with community groups to harness this potential.

There are various local communities currently preparing their own Neighbourhood Plans. For details please see www.woking.gov.uk/planning/policy/ldf/neighplq

Climate Change Supplementary Planning Document (SPD)

This 2013 SPD provides detailed guidance for the application of Core Strategy Policies CS22 'Sustainable construction' and CS23 'Renewable and low carbon energy generation'. It explains what developers need to do to meet the requirements of the above policies. It is helps to deliver high quality sustainable development that minimises the adverse impacts of climate change. The guidance highlights some potential ecological impacts arising from

some means of renewable and low carbon energy generation. Section 7.3 of the SPD directly addresses green infrastructure and biodiversity.

Design Supplementary Planning Document (SPD)

This SPD (2015) provides design guidance and good practice to help developers, of design in new development across the Borough, including designing for biodiversity and climate change.

Thames Basin Heaths Special Protection Area Avoidance 2010-2015

The Avoidance Strategy sets out the approach to mitigate against impact caused by new residential proposals on the Special Protection Area bird habitats in the Borough. Contributions towards SANG now - since April 2015 - form a part of the Community Infrastructure Levy (CIL) tariff.

Biodiversity and Planning in Surrey

This guide (second edition, 2014) explains the planning process and how development in the county can protect and enhance local biodiversity and describes opportunities to enhance biodiversity within development schemes.



House sparrows (James Sellen)



Borage (WBC)

Appendix 4 - Baseline

It is important to understand the current position of the Borough in terms of its existing biodiversity and green infrastructure and the issues affecting these. A snapshot at this stage gives us a baseline from which to gauge the benefits that this Strategy and the Biodiversity and Green Infrastructure Action Plan can bring to the area – to its environment, residents and businesses.

For example,

- What natural green spaces and corridors do we have in the Borough?
- How accessible are these for people to enjoy?
- Which protected (priority) species and habitats call these places home?
- What factors are already affecting, or could later affect, these habitats?
- What protected species are not present but could benefit from the types of natural places the Borough does or could offer?

Some information has already been provided in the Introduction. This appendix provides an audit of green infrastructure and the biodiversity which the local environment supports. The maps referred to are provided at the end of this appendix.

More detailed information on any one species, habitat or designation will often be available online, through more specialised resources or organisations. Useful contacts and links set out in Appendix 7 of this document will help you find what you need.

Current position

Woking Borough's green infrastructure network is made up of a wide range of green assets. These range from landscapes which are statutorily designated or protected to some degree to individual trees and vegetation.

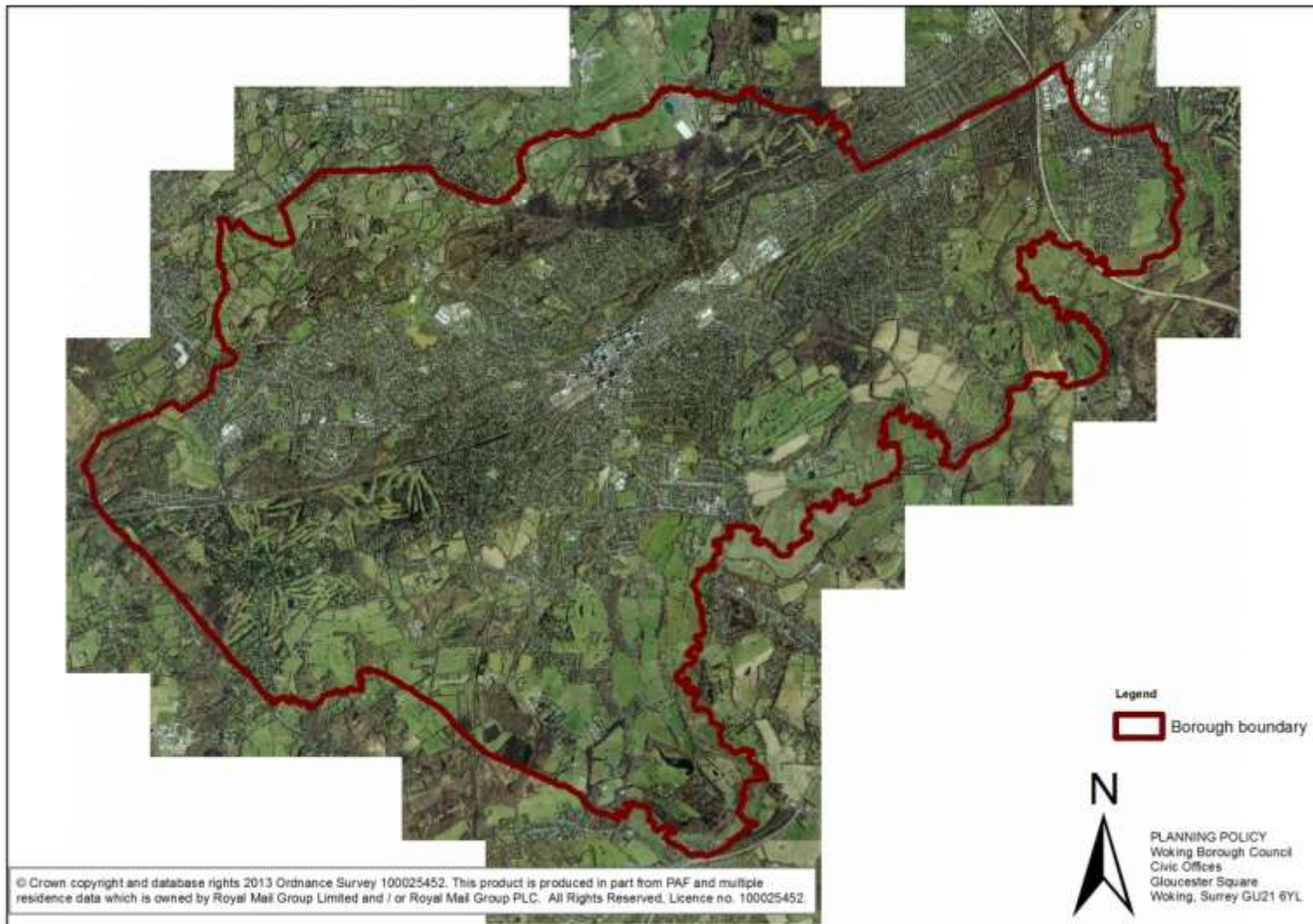
An aerial image of Woking Borough (Map 1, p17) shows it is very green. Approximately 60% of the Borough is designated Green Belt and it is largely undeveloped greenfield land. Essentially, the built up area sits within a large island in the centre of a green sea.

Although green land and elements are more evident on the outskirts than the central urban core, the main built up areas are not absent of green assets. The River Wey and Basingstoke Canal run through the urban area, injecting green/blue seams through the grey island. There are also pockets of open space, recreation areas, verges, tree lined streets/avenues, private gardens that all contribute to the green infrastructure network and biodiversity in Woking Borough. Map 2 (p18) shows existing green infrastructure in Woking Borough.

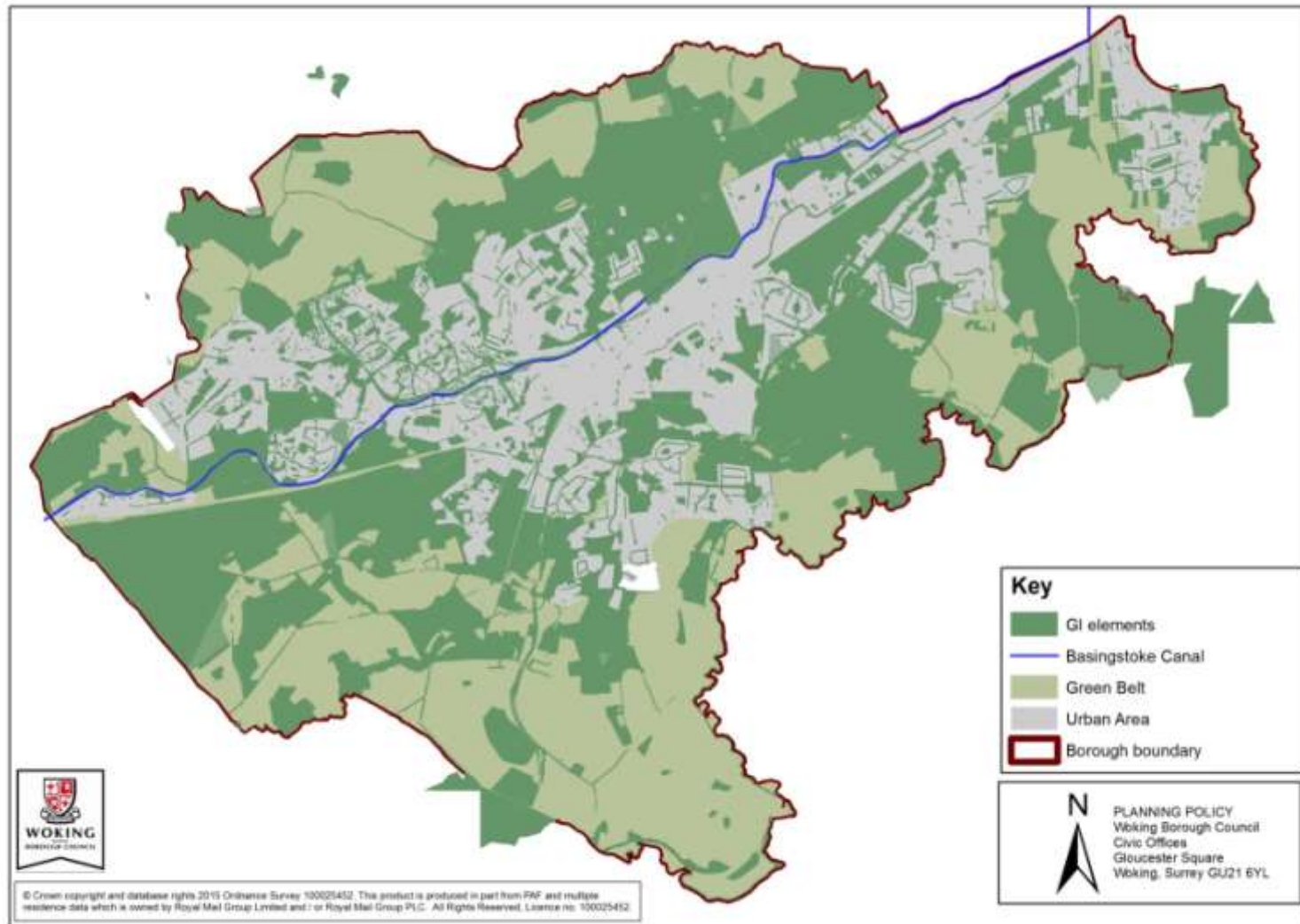
The following identifies the green assets within the Borough and outlines what existing protection these are afforded. This will provide a basis for identifying what the Borough may be lacking and what approach should be taken to further strengthen and enhance both the natural environment and access to this in the future.

A list of local priority habitats and species is available in Surrey Wildlife Trust's *Biodiversity and Planning in Surrey* document.

Map 1 Aerial Map of Woking Borough



Map 2 Existing green infrastructure in Woking Borough



<p>Local Nature reserves (LNR), Local Geological Sites - (see NPPG)</p>	<p>Local nature reserves (LNR) are statutory designations made under Section 21 of the National Parks and Access to the Countryside Act 1949, as amended by Schedule 11 of the NERC Act 2006. They are identified for their nature or wildlife value.</p> <p>There are two LNRs in Woking Borough:</p> <ul style="list-style-type: none"> • White Rose Lane • Mayford Meadows <p>See Map 3 (later in this appendix)</p>
<p>Public Rights of Way (PROW)</p>	<p>Public rights of way are identified under the Countryside and Rights of Way (CROW) Act 2000. Surrey County Council, the local highways authority, has a statutory duty to protect and maintain these. It is noted that many right of way pass cross private land.</p> <p>See Map 4 (later in this appendix)</p>
<p>Trees protected by Tree Preservation Orders (TPOs) and Trees (no formal protection)</p>	<p>There are over 2000 TPOs within the Borough. These comprise of single trees and groups of trees. They are afforded protection under the Town and Country Planning (Tree Preservation) (England) Regulations 2012 for their amenity value to the surrounding area.</p> <p>No works can be undertaken to cut down, top, uproot, prune/lop, wilfully damage or wilfully destroy them unless permission is sought to undertake such works.</p> <p>There are many trees and hedges in the Borough that do not have any formal protection. However local policies seek to protect any trees and hedgerows of significant amenity or environmental value. Local policies also require that, where development proposals would result in tree loss, appropriate replacements are planted and maintained.</p> <p>See Map 5 (later in this appendix)</p>

Sites of Special Scientific Interest (SSSI)

There are six Sites of Special Scientific Interest (SSSI) all or part of which are found within the Borough::

- Horsell Common (status: favourable/recovering condition)
- Ash to Brookwood Heaths (favourable/recovering)
- Smarts and Prey Heaths (recovering)
- Colony Bog & Bagshot Heaths (favourable/recovering)
- Basingstoke Canal (unfavourable/no change)
- Smart's and Prey Heaths (unfavourable/recovering), and
- Whitmoor Common (largely unfavourable/recovering) (fragment only - Whitmoor Common is located in Guildford Borough but adjoins the Woking Borough boundary).

The Government's Public Service Agreement target is for 95% of SSSI land to be in 'favourable' or 'recovering' condition by 2010. Recent surveys (1 May 2014) show that most of the SSSIs in Woking Borough are in 'recovering' and favourable condition (see the [database](#)).

These are sites of national importance for wildlife and/or geology (some are also of international significance). SSSIs contain the most unique and varied habitats which are maintained through active management and conservation. They contain plants and wildlife that would find it difficult to survive elsewhere.

SSSIs are legally protected under the Wildlife and Countryside Act 1981, amended by the CRoW Act 2000 and the NERC Act 2006.

SSSI land may be privately or publically owned. Owners play a key role in the management of the land. Natural England has powers to ensure better protection and management of SSSIs and safeguard their existence into the future. Advisers will visit SSSIs to assess their condition every seven years.

An up to date publicly available [database](#) provides information on each SSSI. Natural England can provide some funding for certain types of management. Further information can be obtained [here](#).

See Map 6 (later in this appendix)

<p>Suitable Alternative Natural Greenspace (SANG)</p>	<p>As part of the Council's Thames Basin Heaths Special Protection Area Avoidance Strategy 2010-2015, the Council has the following operational SANG sites:</p> <ul style="list-style-type: none"> • Brookwood Country Park • Horsell Common, Monument Road • White Rose Lane • Heather Farm wetland, Chobham Road. <p>These are identified to mitigate against potential harm to the SPA as a result of residential development. The designation of greenspace as SANG requires it to meet certain design standards set out by Natural England.</p> <p>The Woking Draft Site Allocations Development Plan Document (DPD) (June 2015) also proposes further new SANG sites.</p> <p>See Maps 7 and 23 (later in this appendix)</p>
<p>Special Protection Area (SPA)</p>	<p>The Thames Basin Heaths SPA comprises a network of 13 sites across 11 Local Authorities in Surrey, Berkshire and Hampshire. These are protected under European Directive 79/409/EEC Birds Directive.</p> <p>Sites in Woking Borough include, Horsell Common SSSI, Brookwood Heath (part of Ash to Brookwood Heath SSSI), and Sheets Heath (part of Colony Bog and Bagshot Heath SSSI). Chobham Common SSSI, Ockham and Wisley SSSI and Whitmoor Common SSSI are also within 5km of the Borough.</p> <p>See Map 8 (later in this appendix)</p>

<p>Common Land</p>	<p>Common Land and town/village greens are protected under the Commons Act 2006. There are a number of areas of Common Land within the Borough:</p> <ul style="list-style-type: none"> • Bisley Common • Brookwood Heath Common • Castle Green • Horsell Common • Horsell Moor • Kingfield Green • Mayford Green • Mill Moor • Prey/Pray Heath • Sheets Heath Common • Smart's Heath • St John's Lye • Westfield Common <p>In addition there are areas such as Pyrford Common, a common in name not designation, but which is in part designated a village green.</p> <p>See Map 9 (later in this appendix)</p>
<p>Cycle ways</p>	<p>The cycle network is extensive within the Borough and Surrey as a whole. Surrey County Council provides interactive maps of cycle routes on their website.</p> <p>Woking Borough Council has its own 'Cycle Woking' website, following successfully receiving funding to improve cycle facilities in the area.</p> <p>Woking has a Planet Trails cycle routes, named after planets.</p> <p>See Map 4 (later in this appendix)</p>
<p>Registered Historic Parks and Gardens</p>	<p>There are three registered historic parks and gardens within the Borough</p> <ul style="list-style-type: none"> • Brookwood Cemetery • Pyrford Court • Sutton Place <p>RHS Garden Wisley is located south east, just outside of the Borough. These spaces of historic importance are part of the country's heritage assets. They are identified for their special character and heritage. The impact on these landscapes are 'material consideration' in the planning process.</p> <p>The preparation of Conservation Management Plans is a way to ensure various matters relating to conservation and management of these landscapes are maintained.</p> <p>See Map 10 (later in this appendix)</p>

<p>River/water features</p>	<p>The main water corridors and their tributaries in the Borough are the River Wey, Hoe Stream, the Basingstoke Canal, the River Bourne and The Wey Navigation.</p> <p>Development near water corridors should avoid impacts on the watercourse itself and the wildlife, for example by creating or maintaining natural buffer zones of an appropriate size. Buffer zones help to protect the ecological and water quality integrity of the watercourse. Normally this is at least 8 metres each side of the bank measured from the bank top. The Land Drainage Act 1991 states consent is required for all works in, under, over or with 8m of a main river. This does not mean work can not be undertake within this 8m.</p> <p>Watercourses are an important habitat for many species. The Environment Agency recommends a buffer zone alongside water corridors for biodiversity purposes.</p> <p>See Map 11 (later in this appendix)</p>
<p>Ancient Woodlands and Woodlands</p>	<p>Surrey is the most wooded County in England and there are numerous ancient woodlands within Woking Borough. Surrey Wildlife Trust completed an inventory of Surrey's Ancient Woodland in 2011. These are ancient as they are known to be in existence since 1600. These are important for biodiversity. The NPPF states that development that would result in the loss of ancient woodland or veteran trees should be refused (unless the benefits outweigh the loss).</p> <p>See Map 12 (later in this appendix)</p>
<p>Parks and gardens</p>	<p>The last comprehensive review of open spaces by the Council was undertaken as part of The Open Space, Sports and Recreation Facilities Audit (2008) in the Borough. It found there are 11 parks and gardens in the Borough, these are listed in the audit and includes urban parks, country parks and formal gardens. Examples include Woking Park and Goldsworth Park. The new Muslim Burial Ground Peace Garden (opened November 2015) provides a beautiful and calm place of contemplation.</p> <p>Since the audit was carried out there has been the creation of a new park Hoe Valley Park and various SANGS (see above).</p> <p>The Core Strategy sets a presumption against the loss of open space and play facilities, except where it can be demonstrated that there is an excess of provision, or where alternative facilities of equal or better quality will be provided as part of the development.</p> <p>See Maps 13 and 21 (later in this appendix)</p>

<p>Amenity green space</p>	<p>The Open Space, Sports and Recreation Facilities Audit 2008 calculated 82 areas of amenity green space (which is informal recreation space in and around housing). These are listed in the audit. This strategy has not reviewed the new amenity space.</p> <p>See Map 13 (later in this appendix)</p>
<p>Children play areas and Teenage provision</p>	<p>The 2008 audit listed 36 play areas. Since then there have been a few new sites, with a total of 41 recorded. A number of sites have also been refurbished.</p> <p>See Map 22 (later in this appendix)</p>
<p>Outdoor sports and recreation</p>	<p>The Open Space, Sports and Recreation Facilities Audit 2008 calculated 39 outdoor sports facilities in the Borough, including golf courses, bowling greens and sports grounds. Since then new facilities have been created. The NPPF promotes the opportunities for outdoor sport and recreation.</p> <p>The Core Strategy seeks to prevent the loss of recreation facilities, except where it can be demonstrated that there is an excess of provision, or where alternative facilities of equal or better quality will be provided as part of the development.</p> <p>See Maps 13 and 21 (later in this appendix)</p>

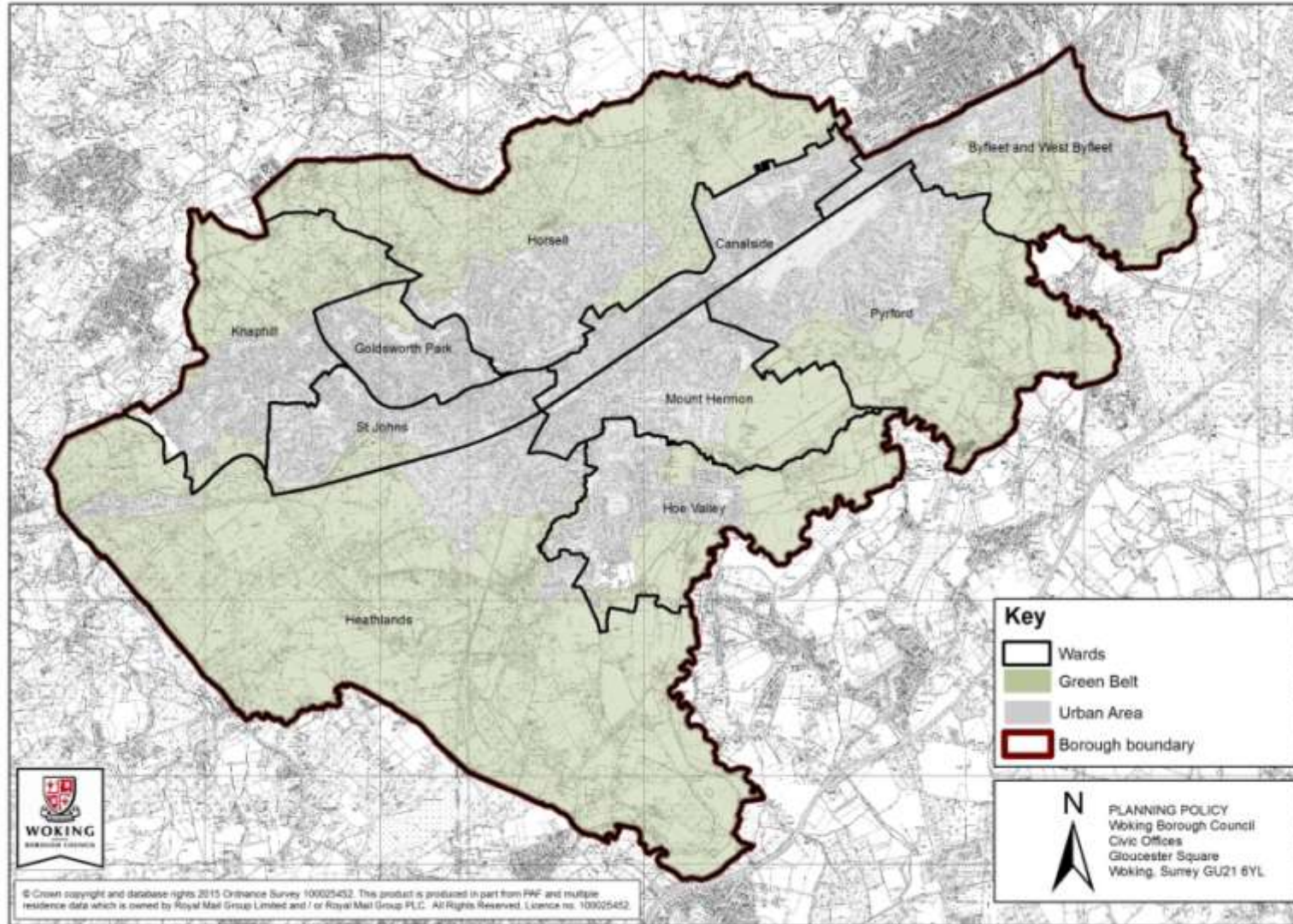
<p>Allotments</p>	<p>There are 10 allotments in the Borough.</p> <ul style="list-style-type: none"> • Albert Drive, Sheerwater, Woking • Derry's Field, Coniston Road, Old Woking • Eden Grove Road, Byfleet • Horsell Allotments, Bulbeggars Lane, Woking • Knaphill Allotments, Creston Avenue, Woking • Leisure Lane, off Camphill Road, West Byfleet • Maybury Gardens, Alpha Road, Woking • Sheets Heath Lane, Brookwood • Winern Glebe, Rectory Lane, Byfleet <p>Littlewick Allotments, Carhouse Lane, Woking is a new site since the 2008 audit.</p> <p>The Open Space, Sports and Recreation Facilities Audit 2008 showed the demand for these to be uneven throughout the Borough. The allotments at Byfleet and Maybury find there to be surplus, whereas allotments at West Byfleet and Horsell have long waiting lists. The last study found there to be approximately 700 plots over nine allotments, with 81 people on waiting lists. Up to date information regarding availability can be obtained from the respective allotment societies.</p> <p>See Maps 14 and Map 20 (later in this appendix)</p>
<p>Cemeteries and churchyards</p>	<p>One cemetery (Brookwood Cemetery) and 5 churchyards. Multiple spaces available for burial and also serve a recreational function as places for walking, quiet contemplation and wildlife interest.</p> <p>The audit published in 2008 found the need for these areas for recreation was generally met.</p> <p>See Map 15 (later in this appendix)</p>

<p>Sites of Nature Conservation Importance(SNCI)</p>	<p>There are over 44 SNCIs in Woking Borough. These are non-statutory local designations, identified for their local nature conservation and geological value. These were identified in the early 1990s with an update in 2003. Sites were identified through joint working between Surrey County Council, Surrey Wildlife Trust, Natural England (then called English Nature), Environment Agency and Woking Borough Council. There are a number of regionally important wildlife sites which have been designated as Sites of Nature Conservation Importance (SNCI). Pyrford Common, Roundbridge Farm, Grayshott Fields, Wheelers Meadow (South), Warren Farm Meadows, Pyrford Place Lake, the Hoe Stream and River Wey were designated as SNCI's to protect the important meadow, marsh, pasture, heathland and water course habitats. Development policies seek to conserve and enhance these sites where possible.</p> <p>Details of all SSSIs in Woking Borough can be found at SSSI database (Natural England) www.sssi.naturalengland.org.uk/Special/sssi/search.cfm</p> <p>More information about SNCIs is available through the Single Data List (SDL 160) regarding enhanced local biodiversity and also from the Surrey Local Sites Partnership. See Map 16 (later in this appendix)</p>
<p>Highway land-roundabouts and verges</p>	<p>These are found in various parts of the Borough and are maintained by Surrey County Council.</p> <p>See Map 17 (later in this appendix)</p>
<p>Special Areas of Conservation (SAC)</p>	<p>There is one area of SAC to the West of the Borough. SACs are designated for their international importance.</p> <p>This is an area afforded special protection under the European Union's Habitats Directive 92/43/EEC. The site is also an SSSI. The additional designation as a SAC is recognition that some or all of the wildlife habitats and species are particularly valued in a European context.</p> <p>See Map 18 (later in this appendix)</p>
<p>Agricultural land</p>	<p>The NPPF seeks to retain 'best and most versatile agricultural land' where possible to conserve soil resources. Best and most versatile land fall between grades 1 to 3a agricultural land classification. Information on these can be obtained from Natural England.</p>
<p>Domestic gardens</p>	<p>These are in private ownership and the protection of these are largely in the control of private individuals.</p> <p>Domestic gardens are defined as greenfield land in the NPPF. The general principle is that new development should be focused on previously developed land, however greenfield land can be developed on</p>

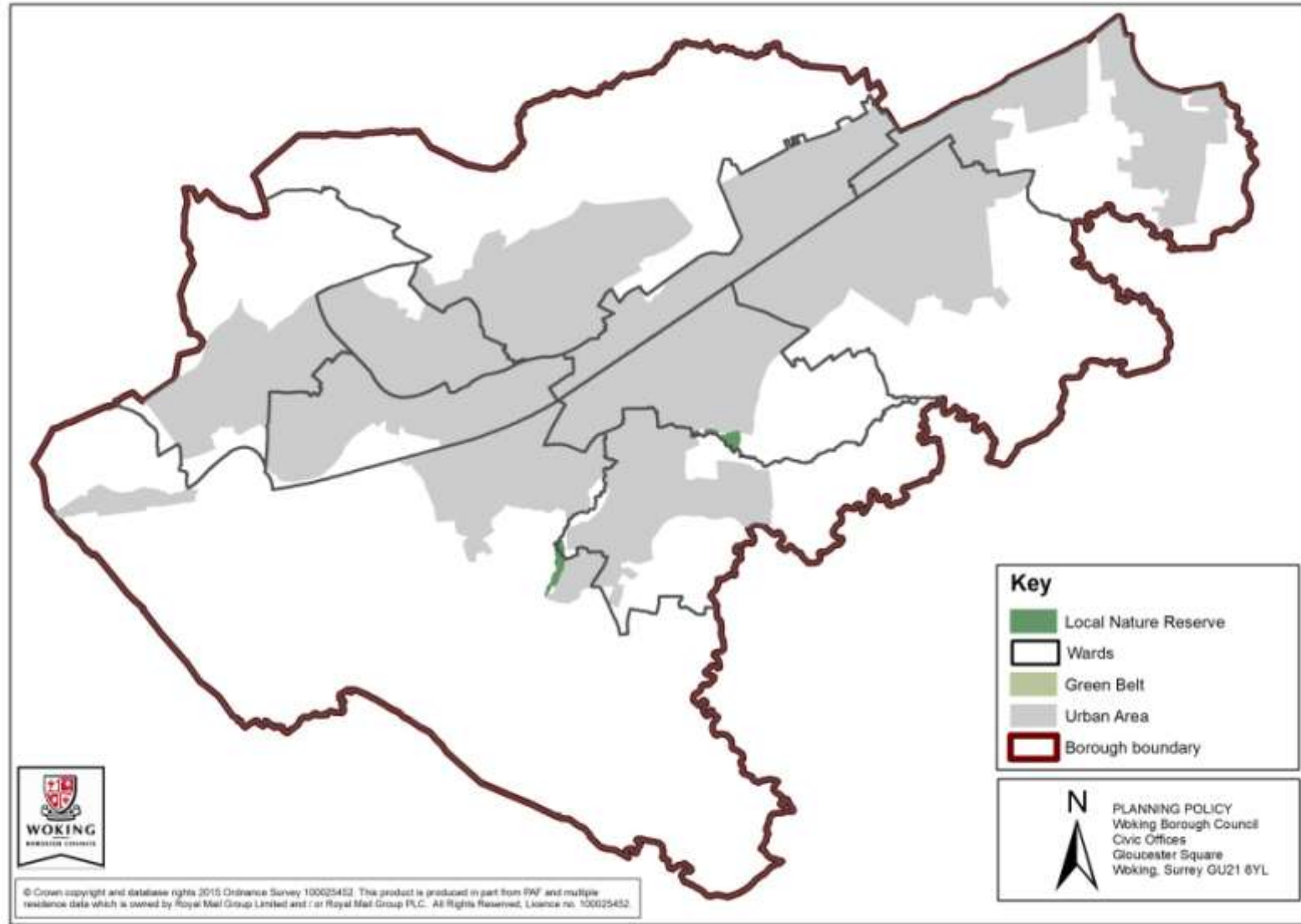
An additional map, Map 19 (p42) is also provided which provides a broad indication of the distribution of new housing in Woking Borough up to 2027.

The following map shows the electoral wards in Woking Borough from May 2016. This may assist reading of the mapped information which follows.

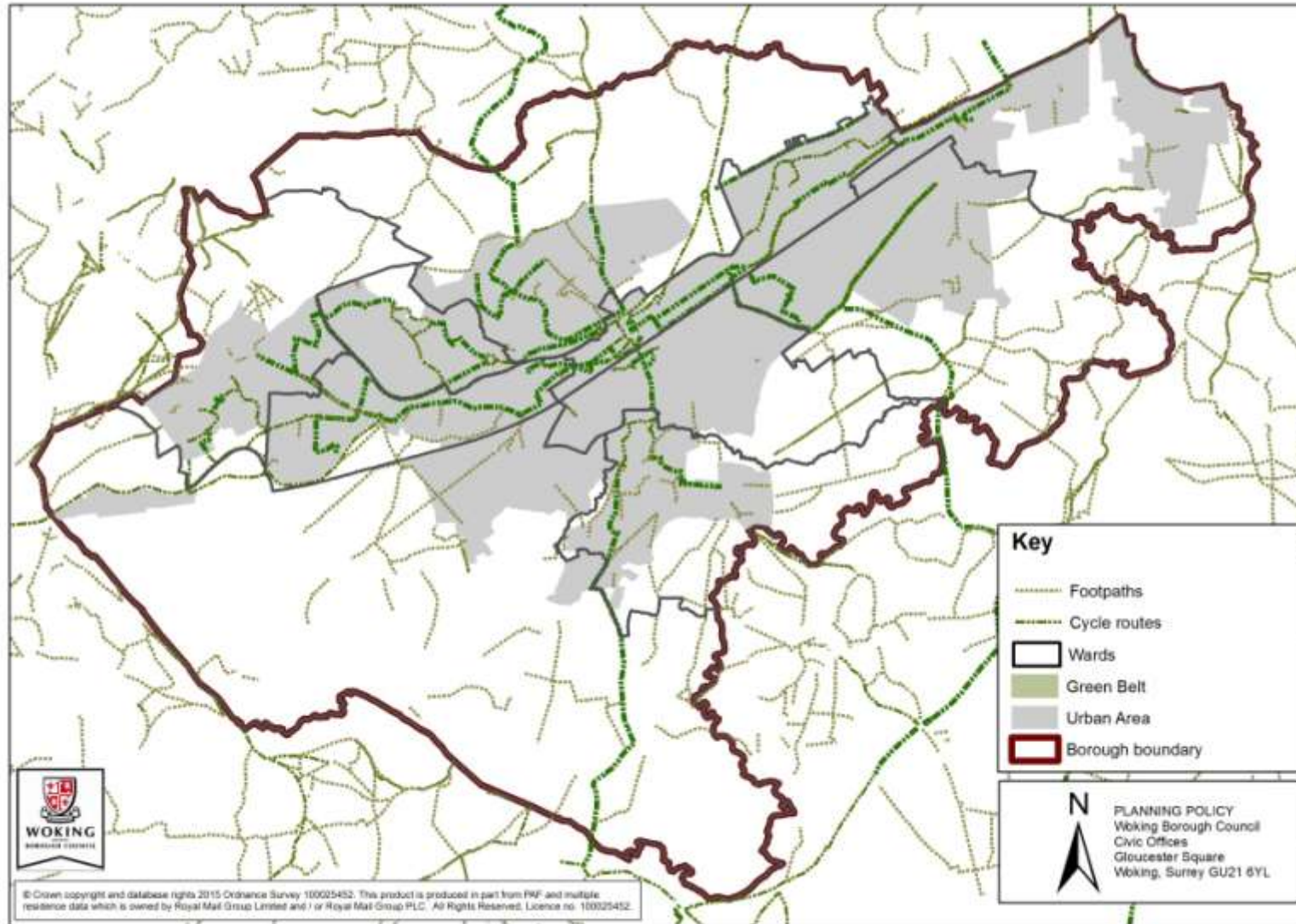
Electoral ward boundaries in Woking Borough from May 2016



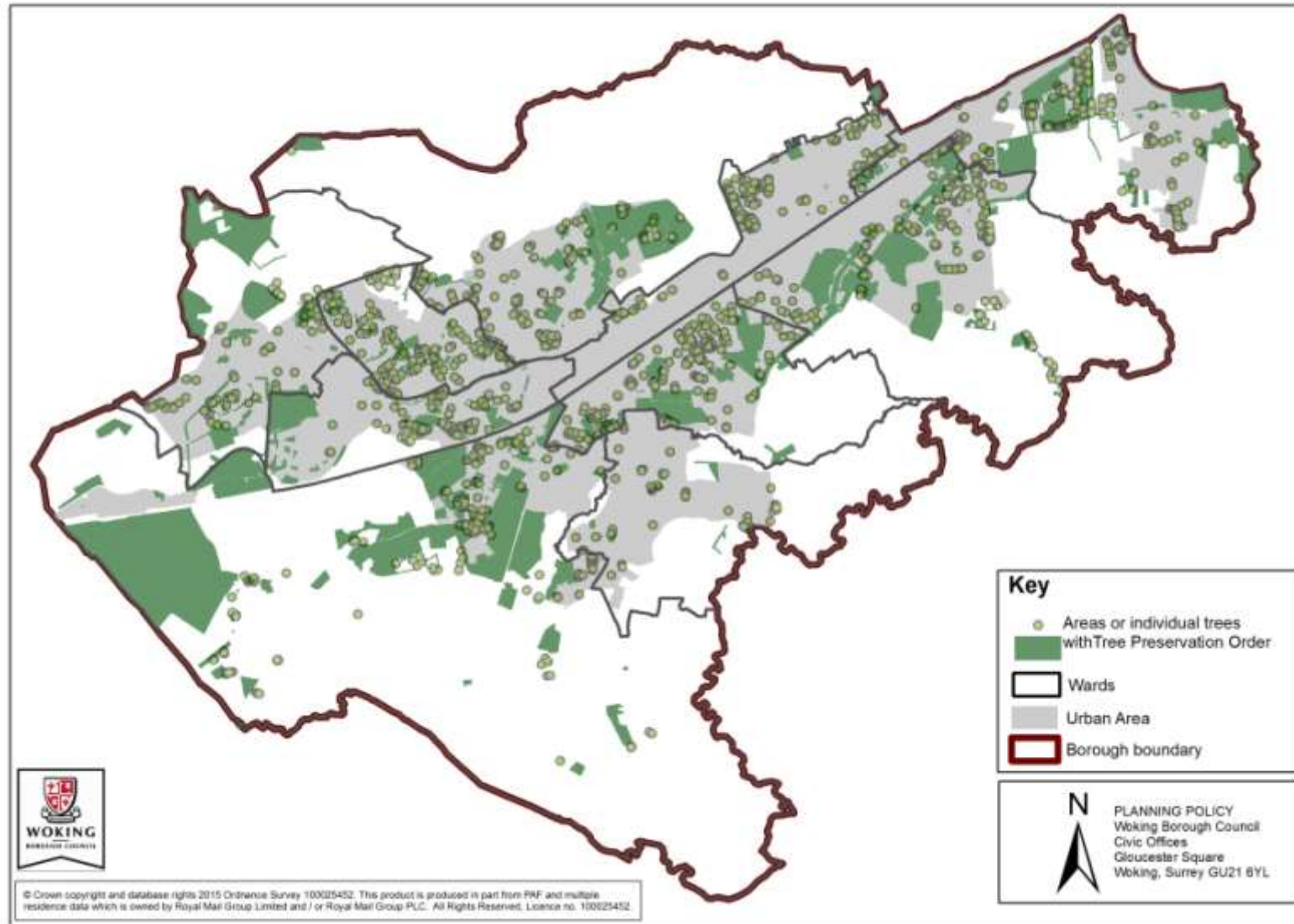
Map 3 Local Nature Reserves (LNR) in Woking Borough



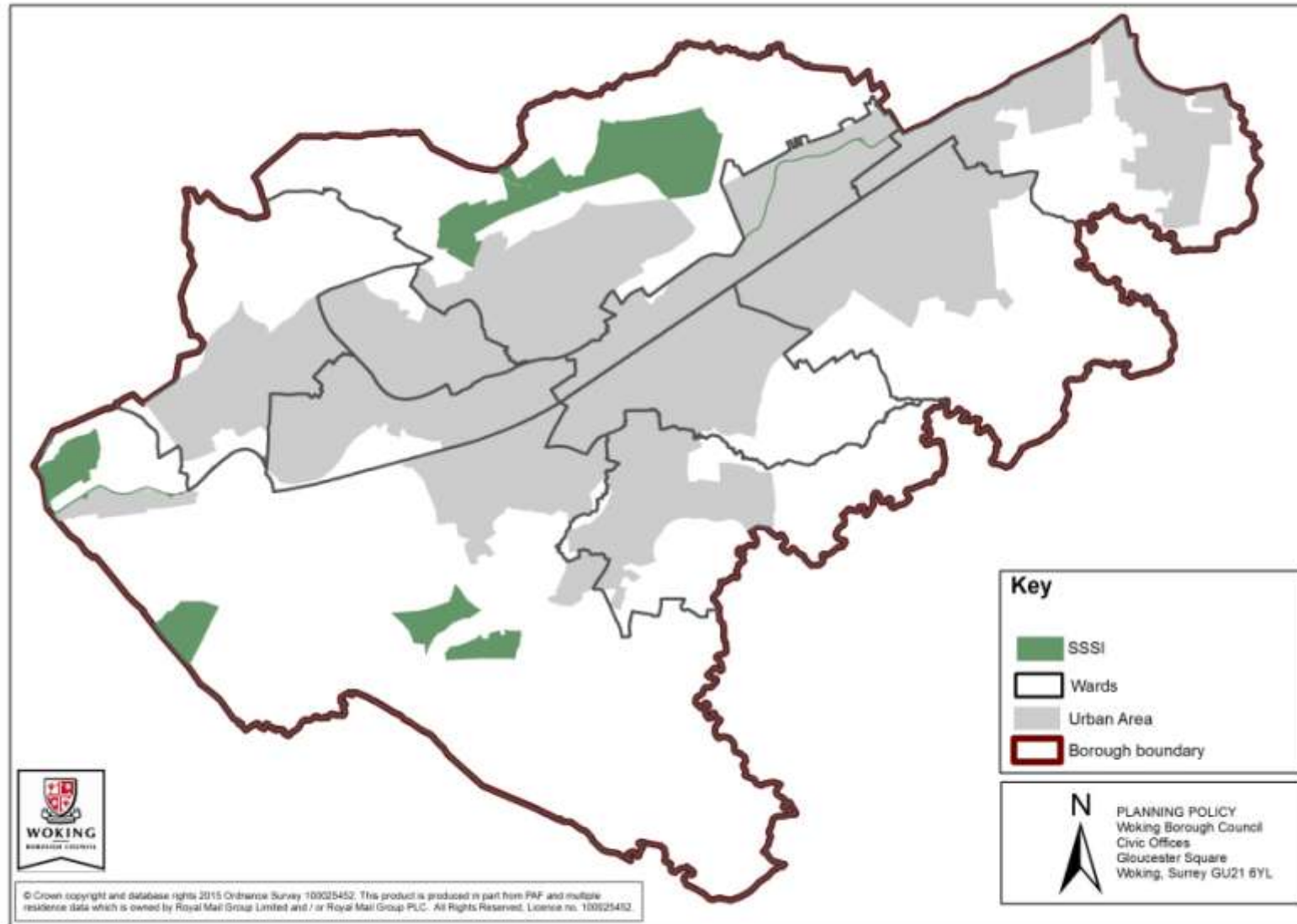
Map 4 Existing footpaths and cycle ways in Woking Borough



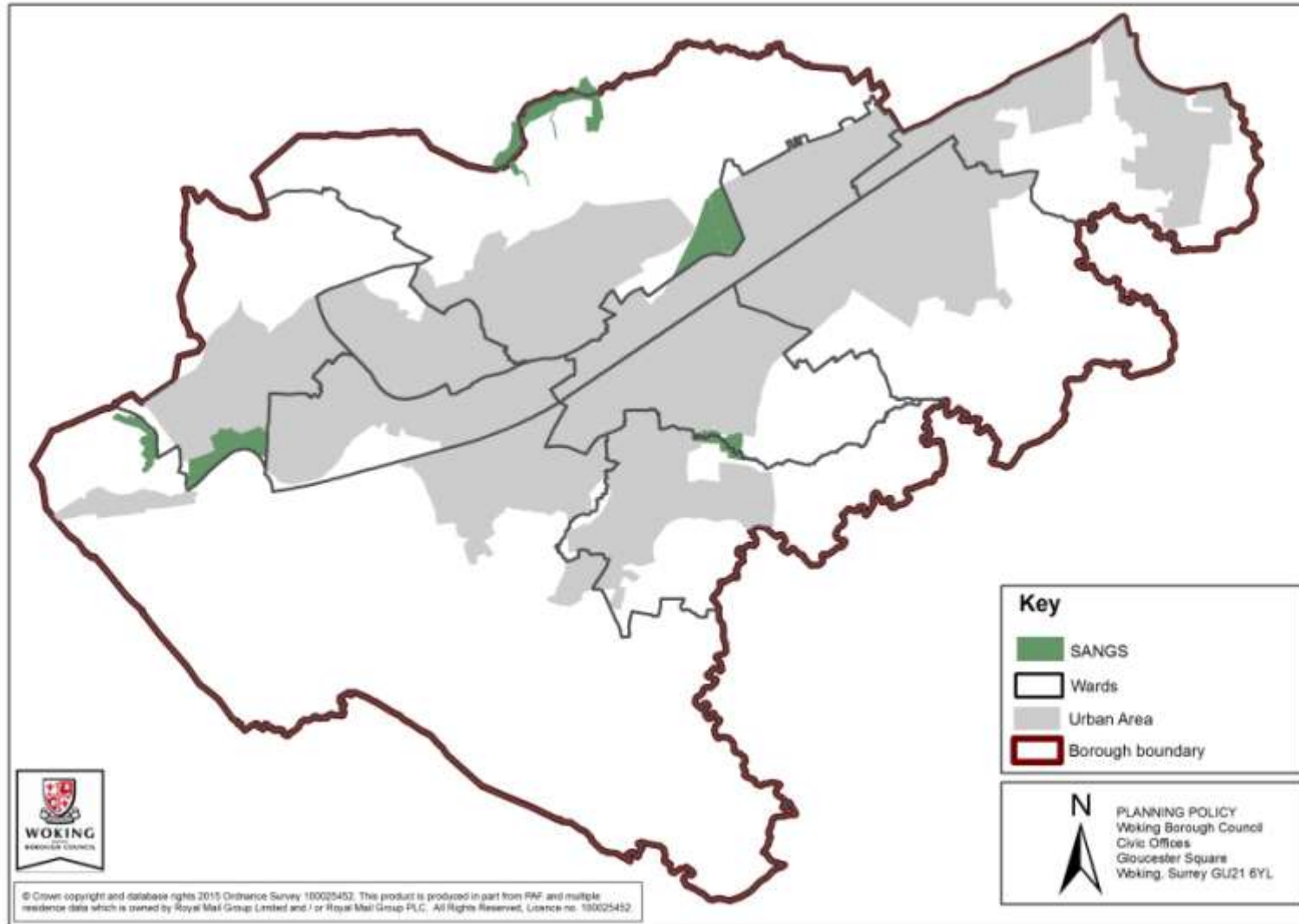
Map 5 Existing trees with Tree Preservation Order (TPO) in Woking Borough



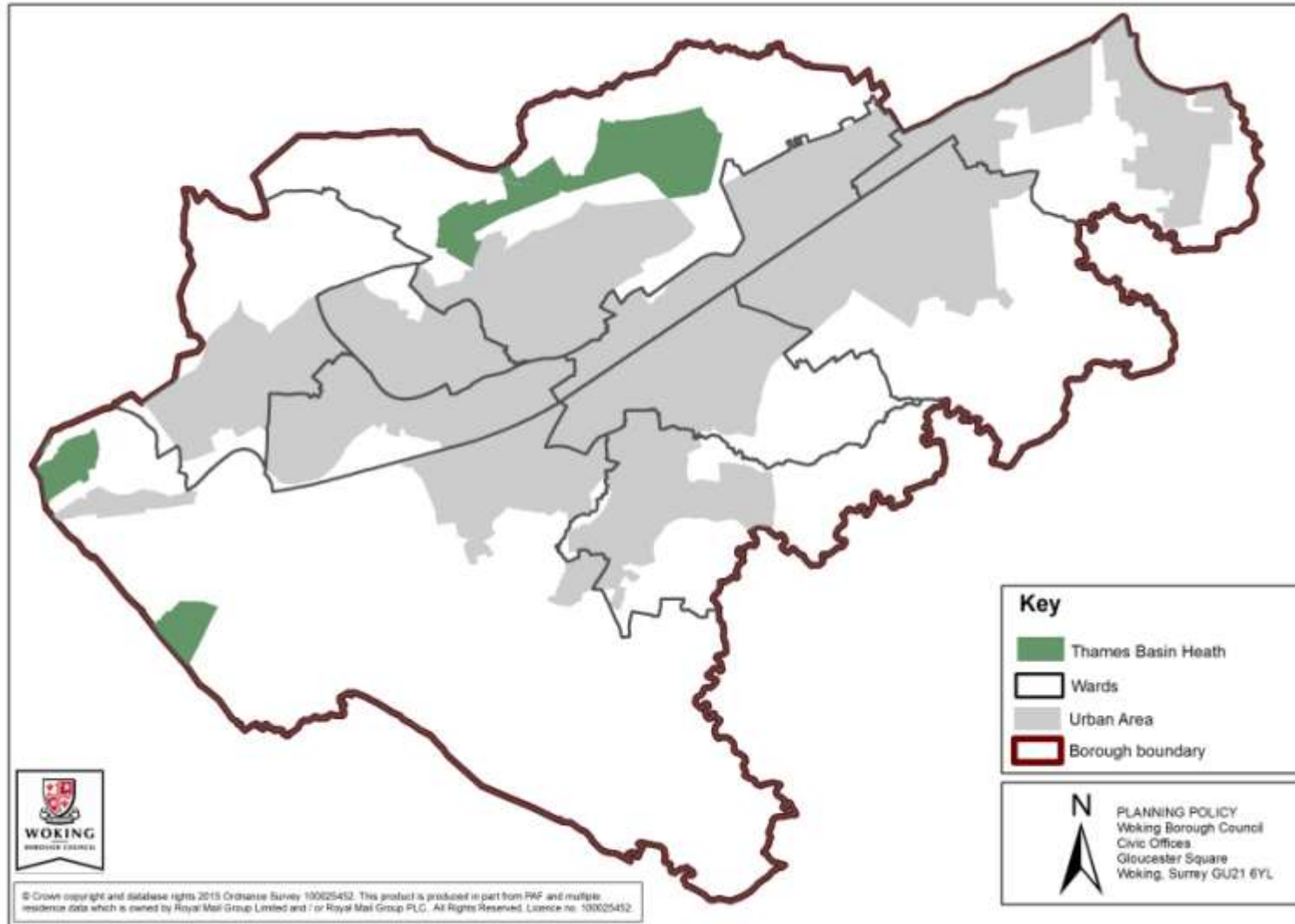
Map 6 Sites of Special Scientific Interest (SSSI) in Woking Borough



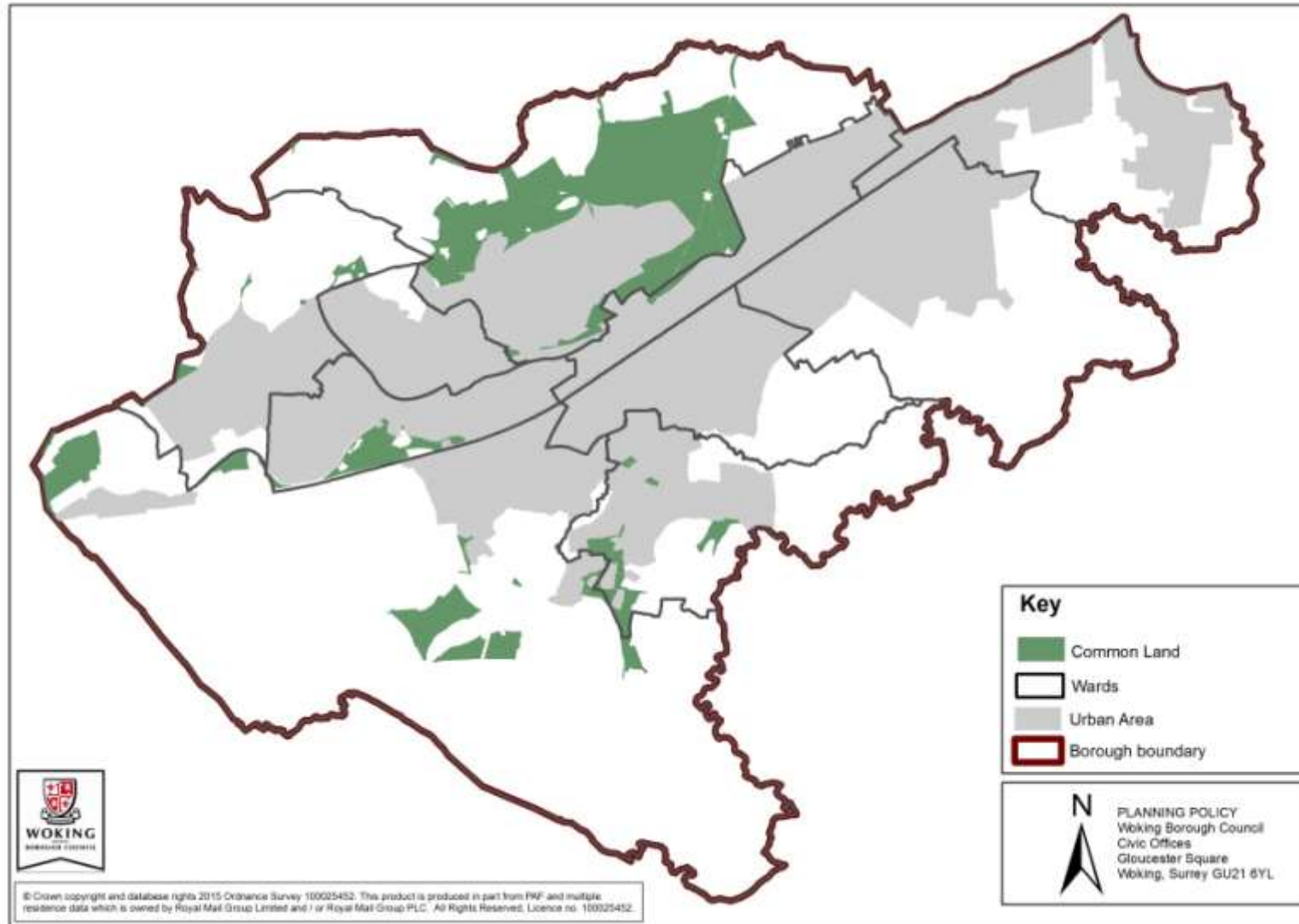
Map 7 Suitable Alternative Natural Greenspace (SANG) in Woking Borough

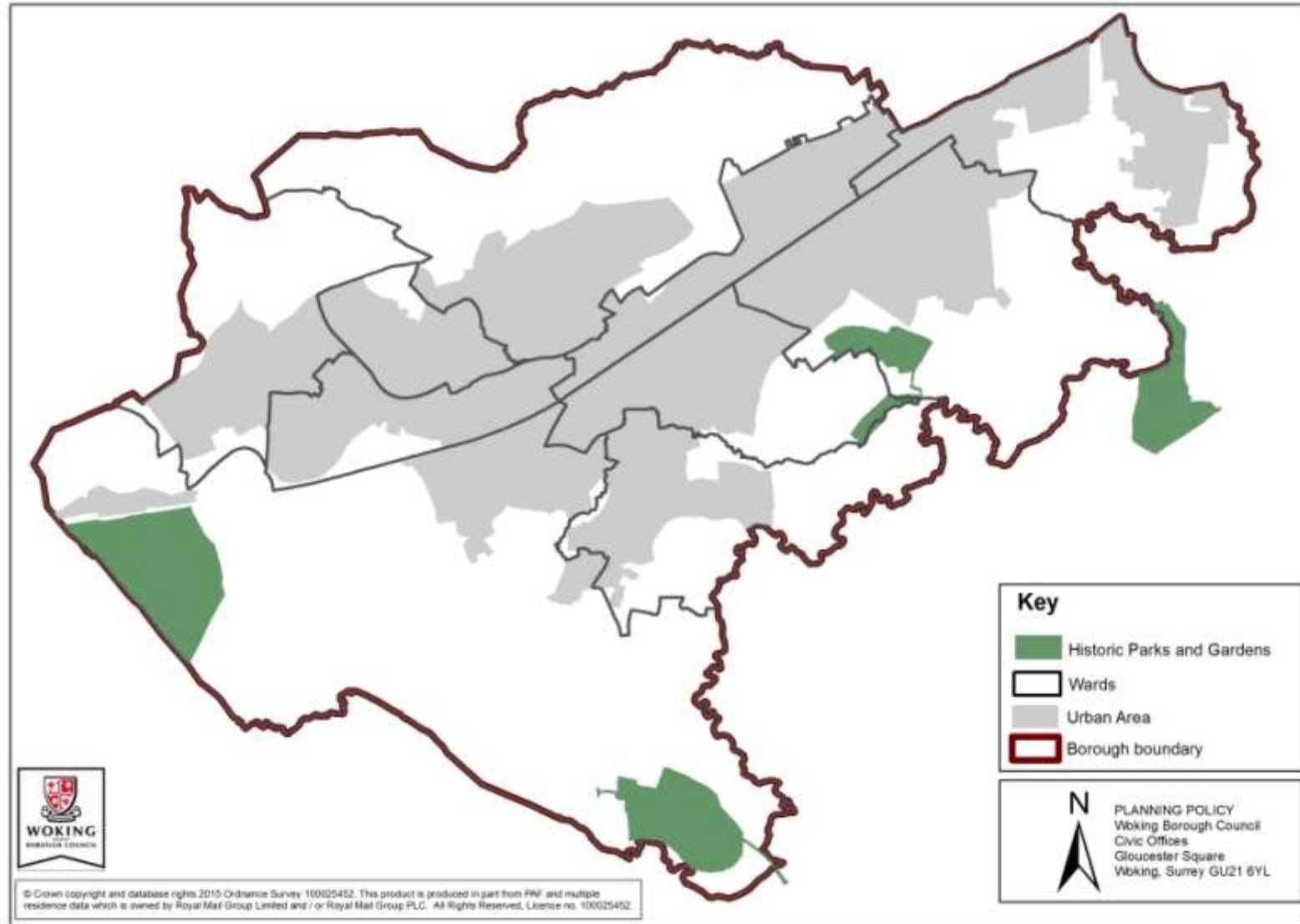


Map 8 Special Protection Area (SPA) in Woking Borough

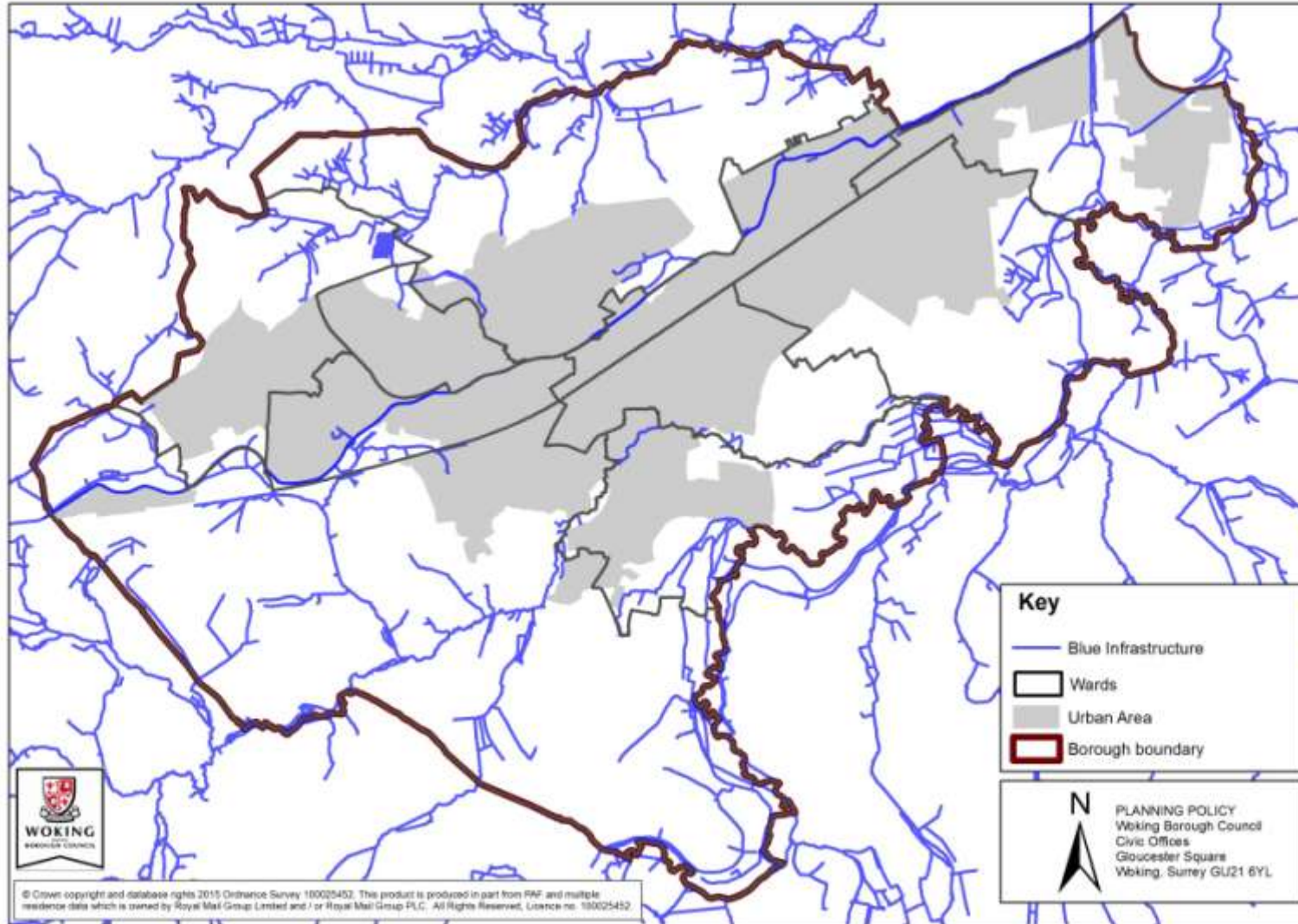


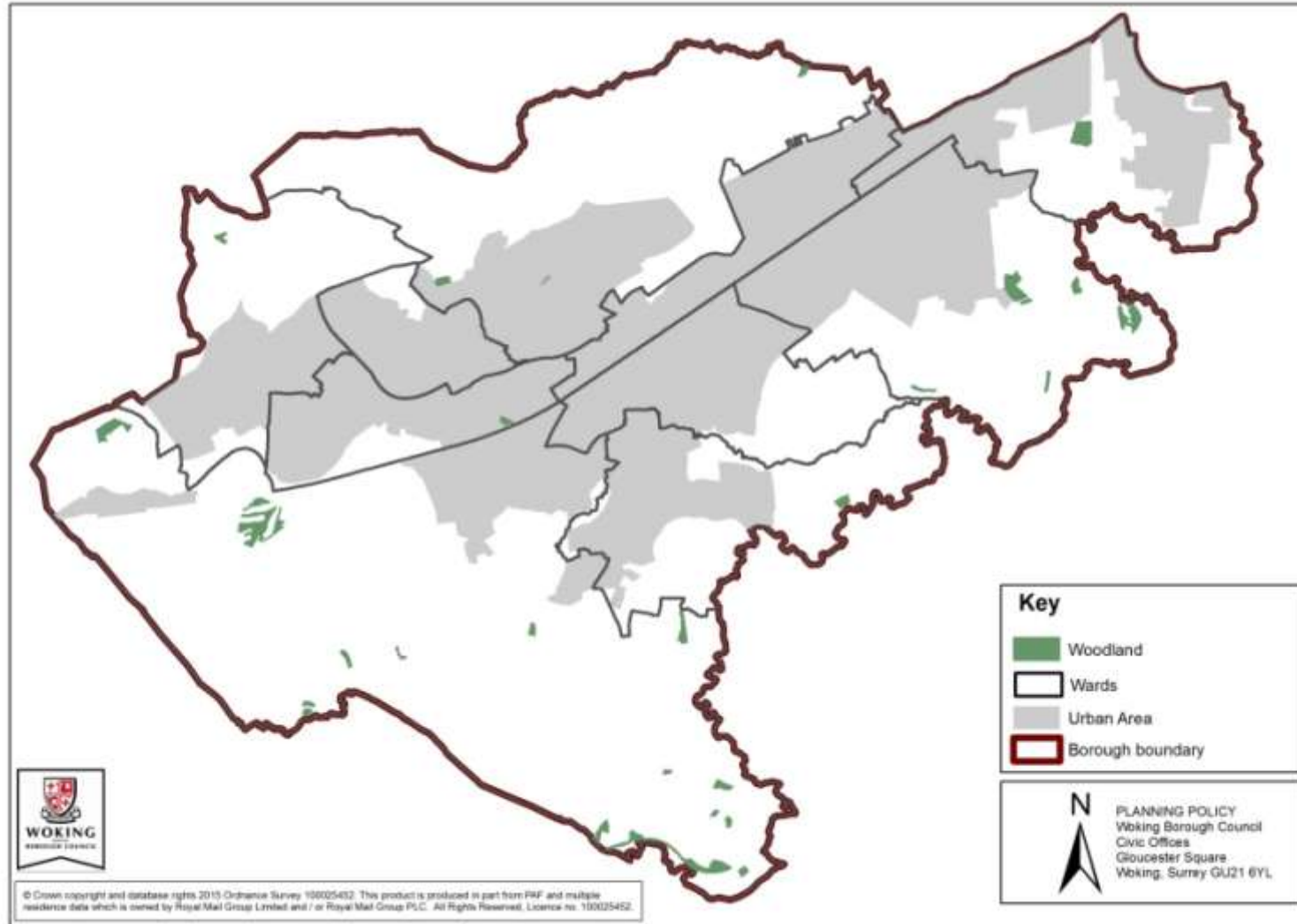
Map 9 Areas of Common Land in Woking Borough

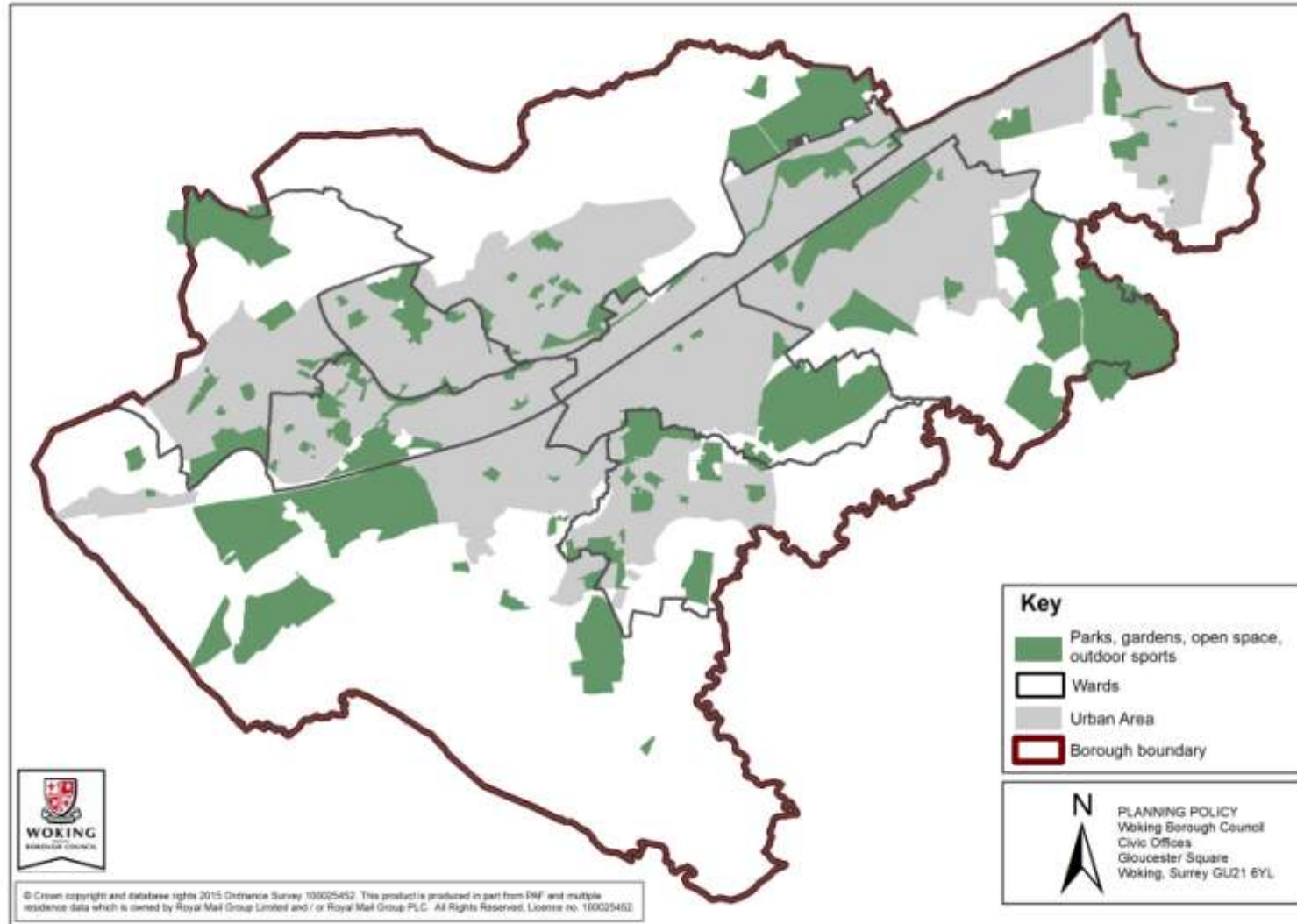


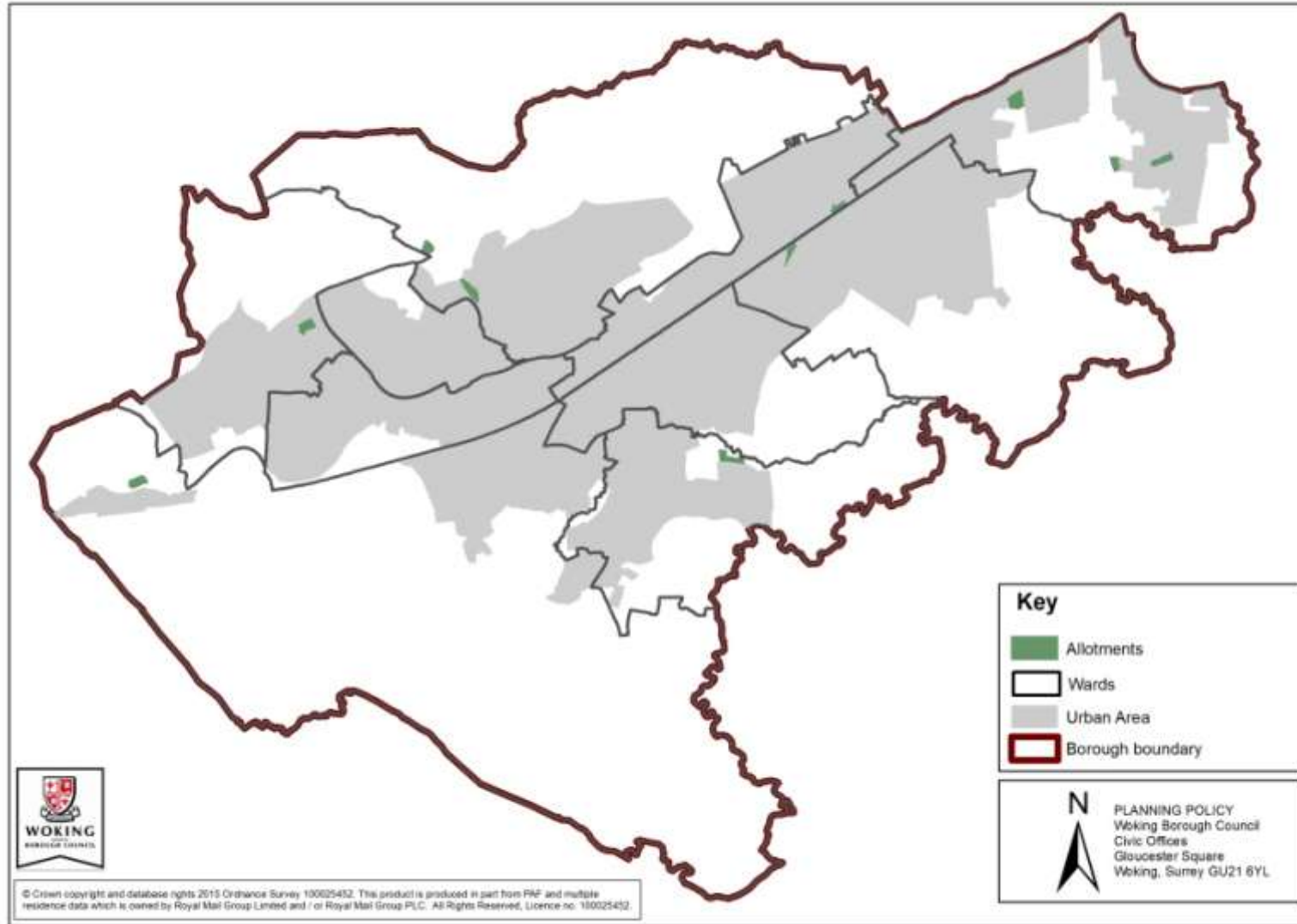


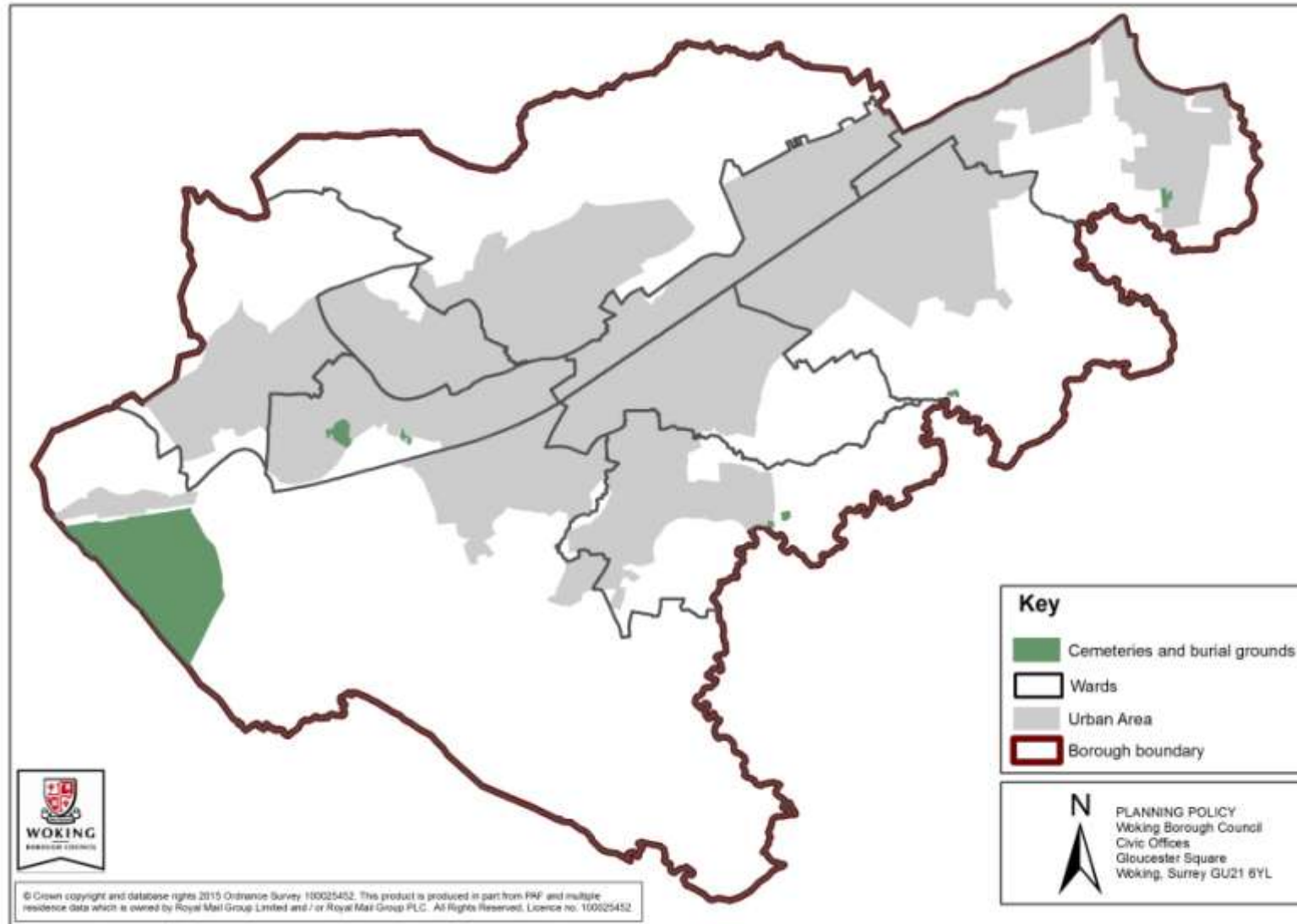
Map 11 Blue infrastructure in Woking Borough

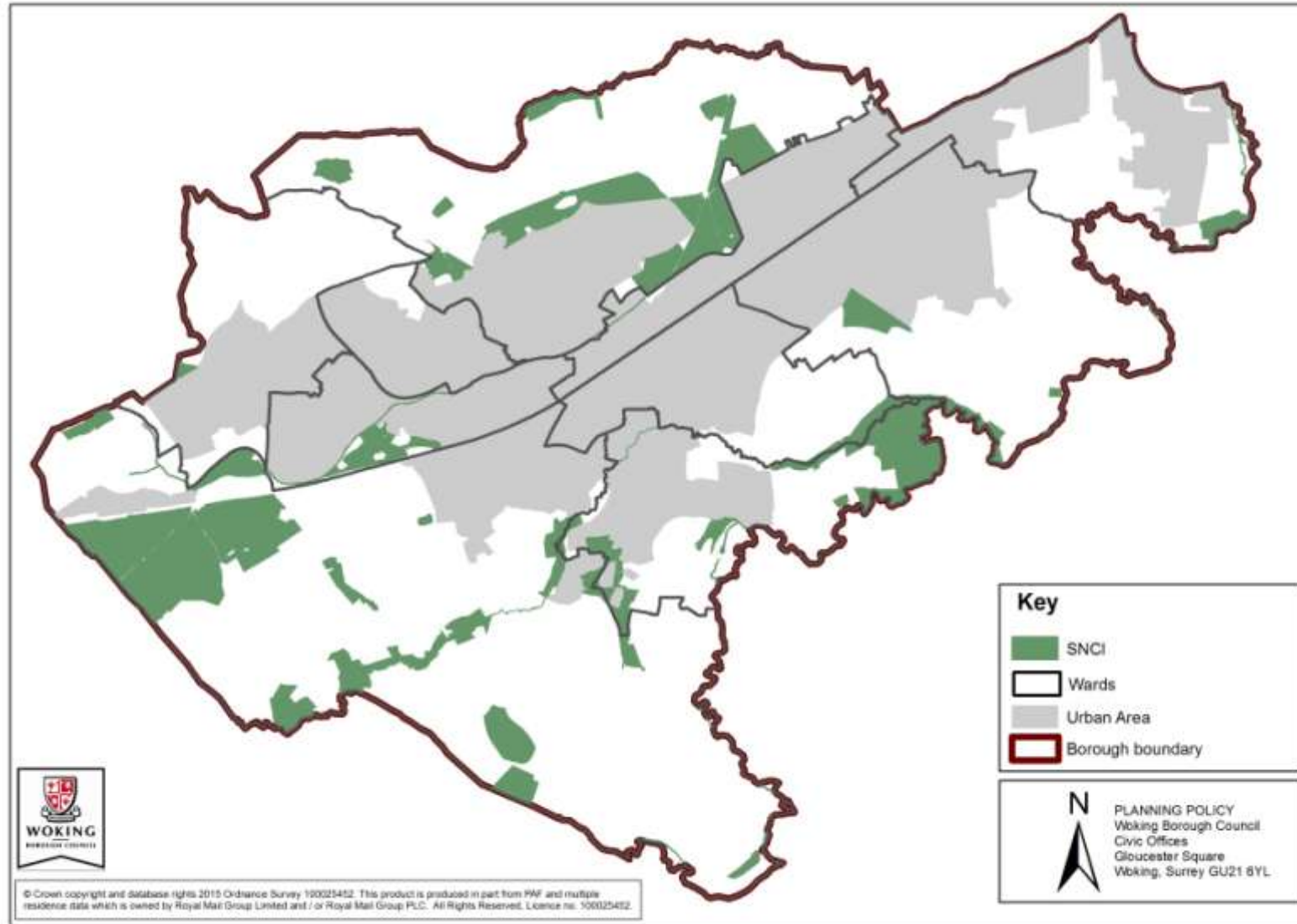


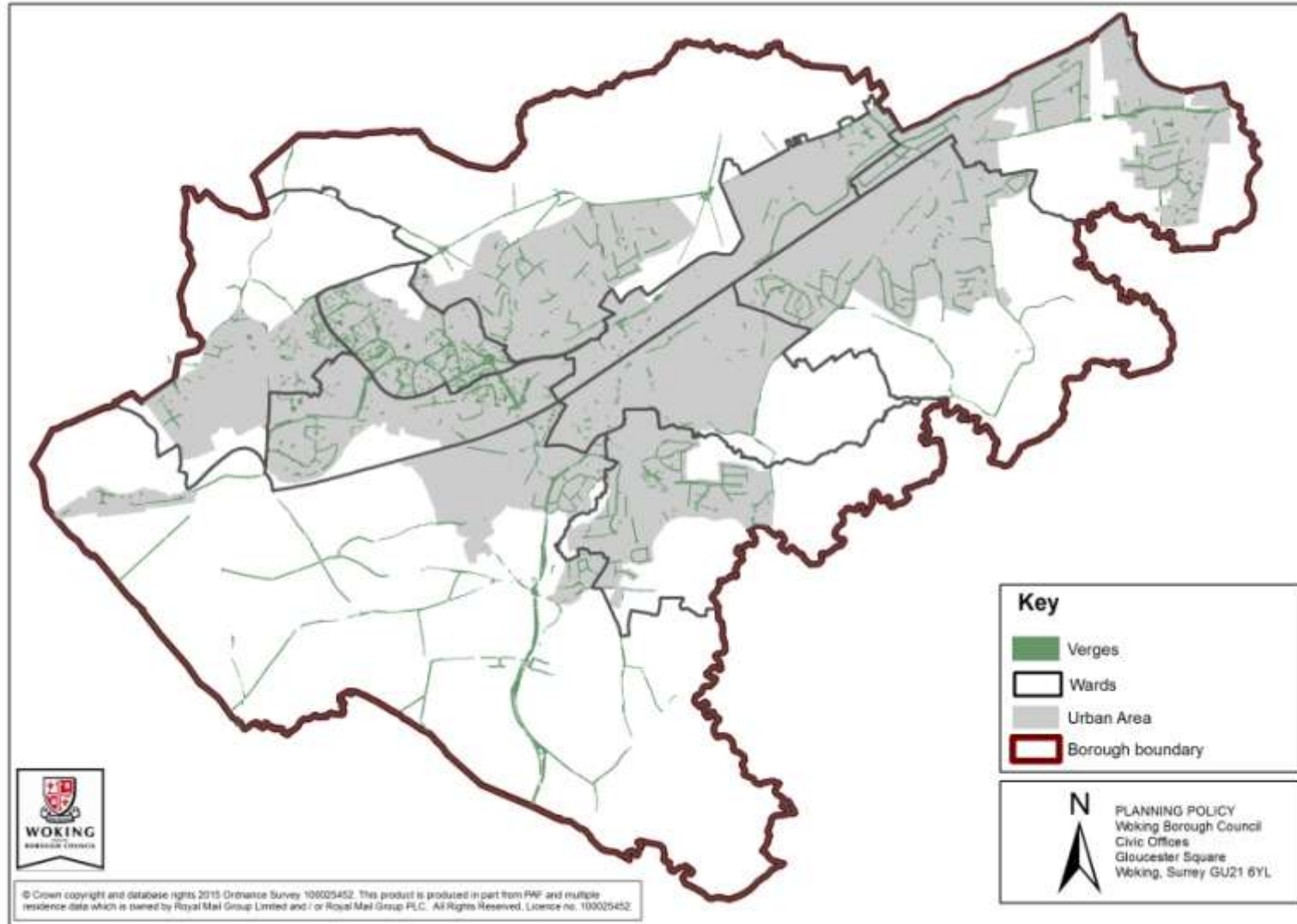


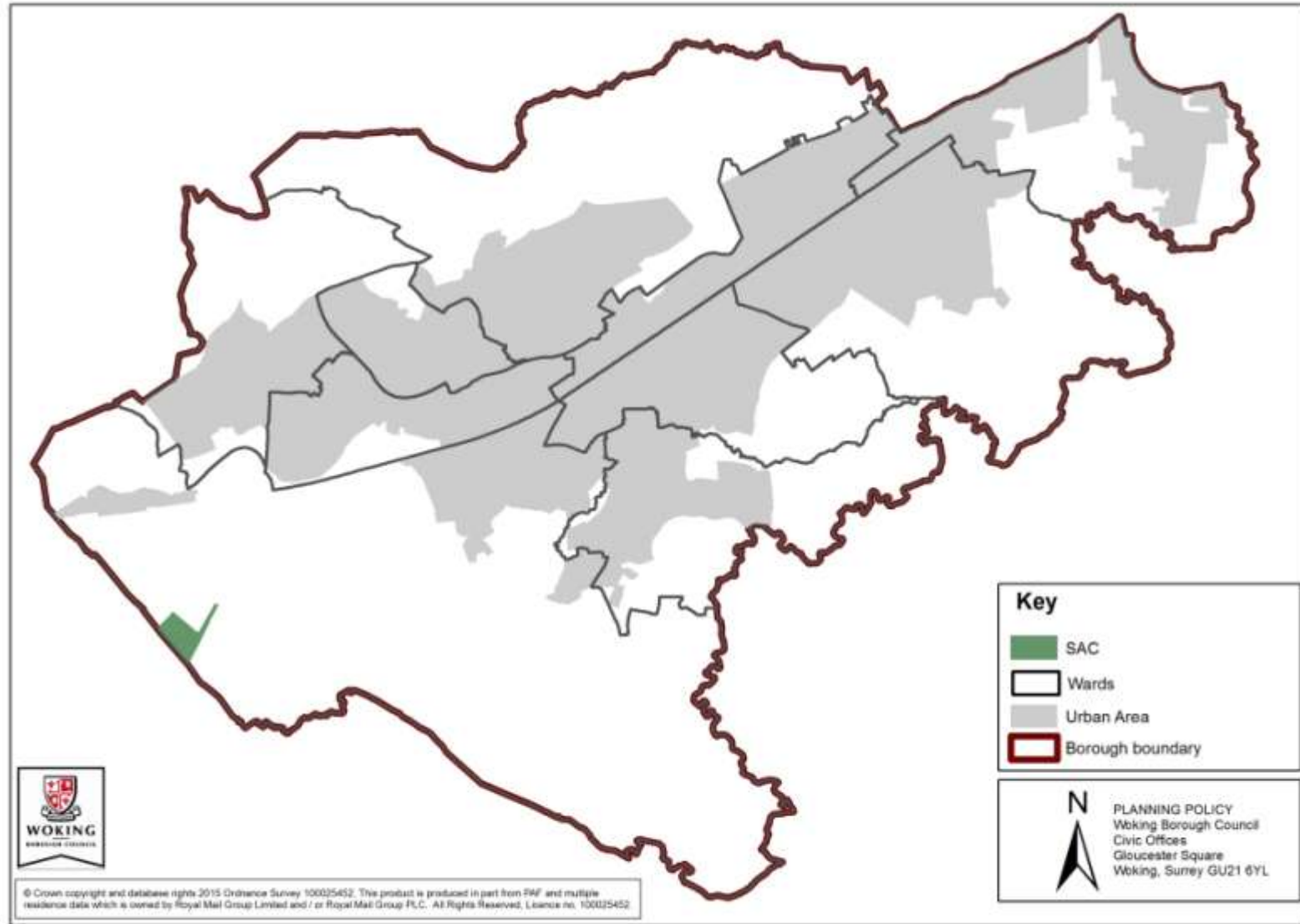


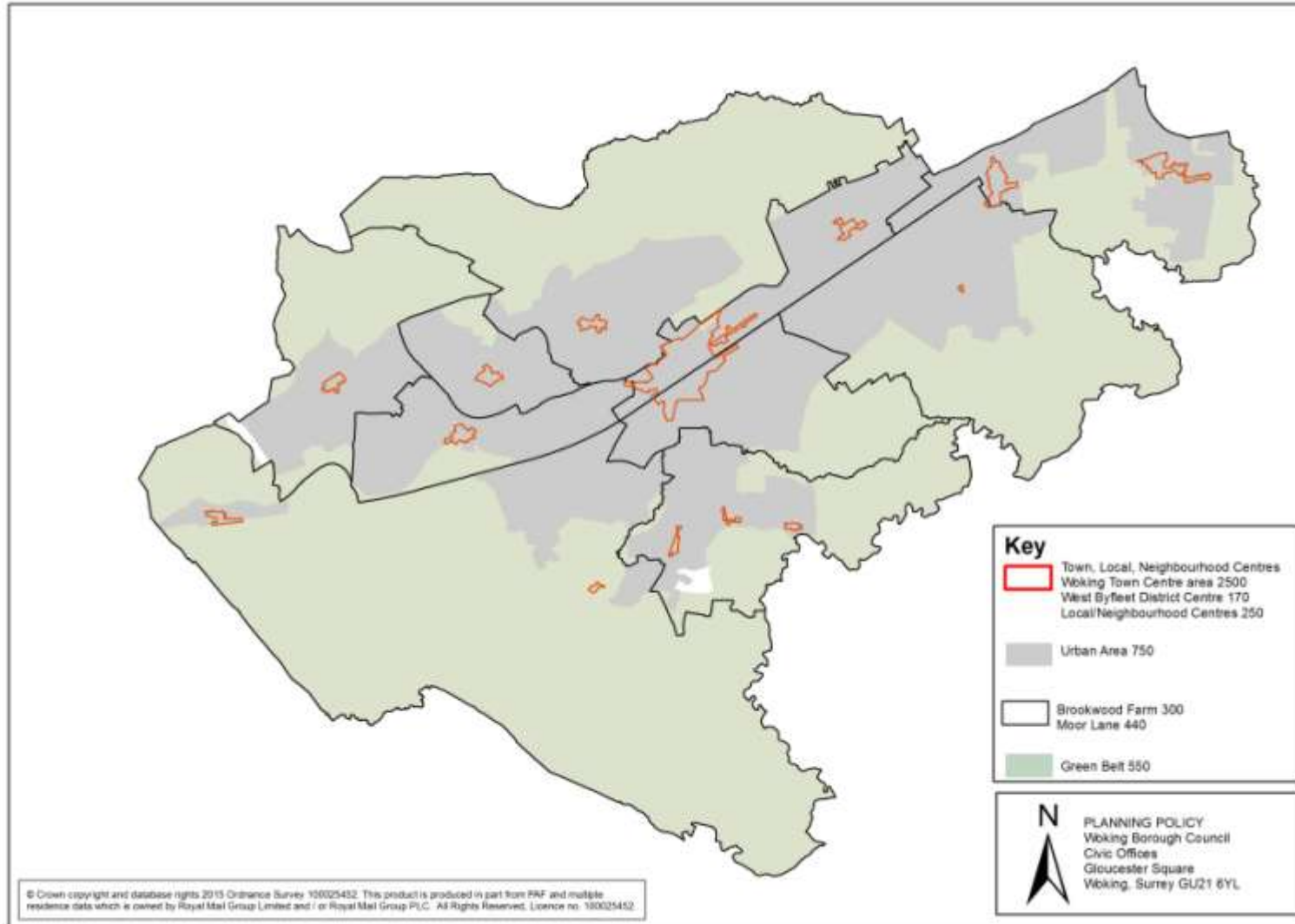


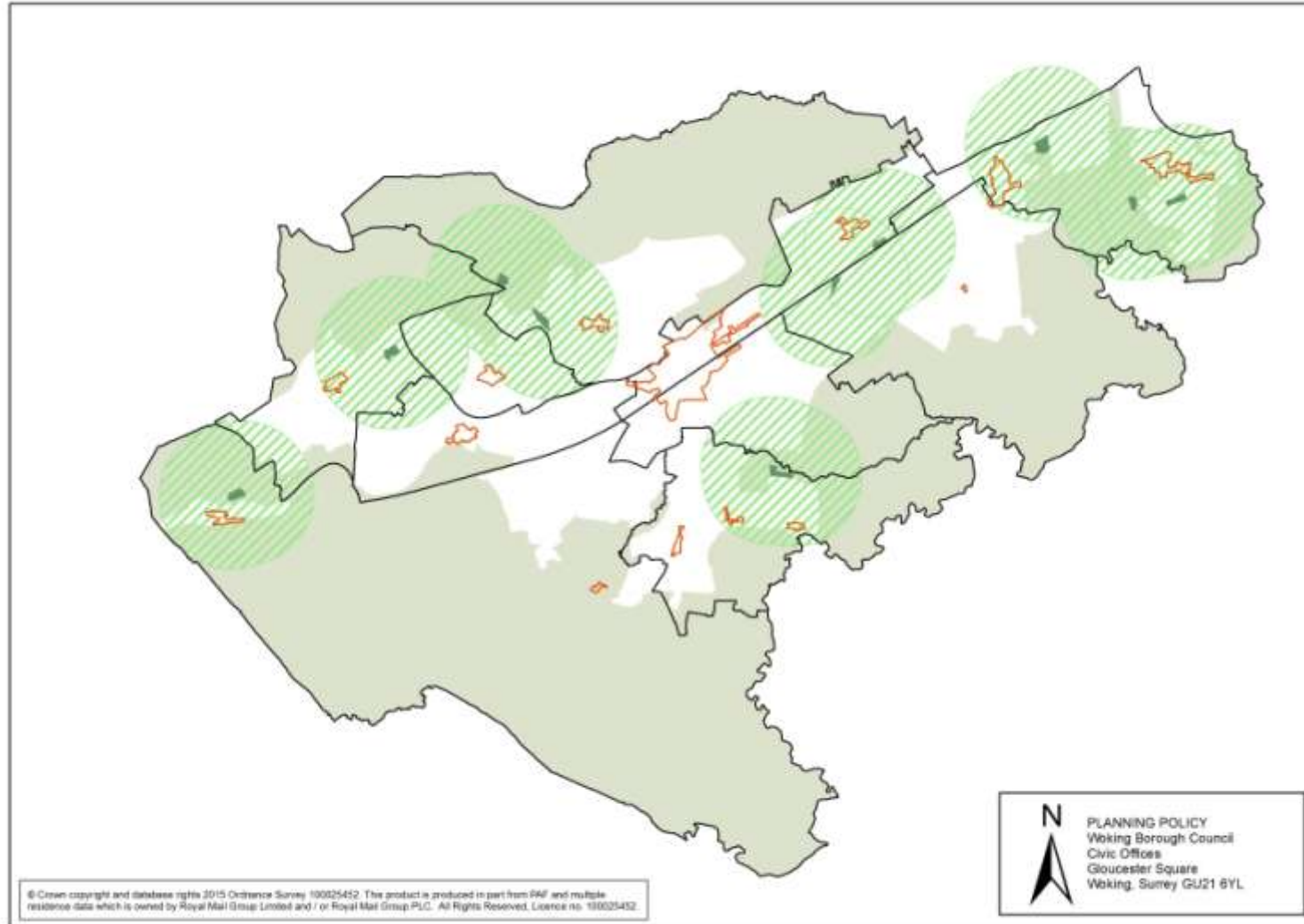


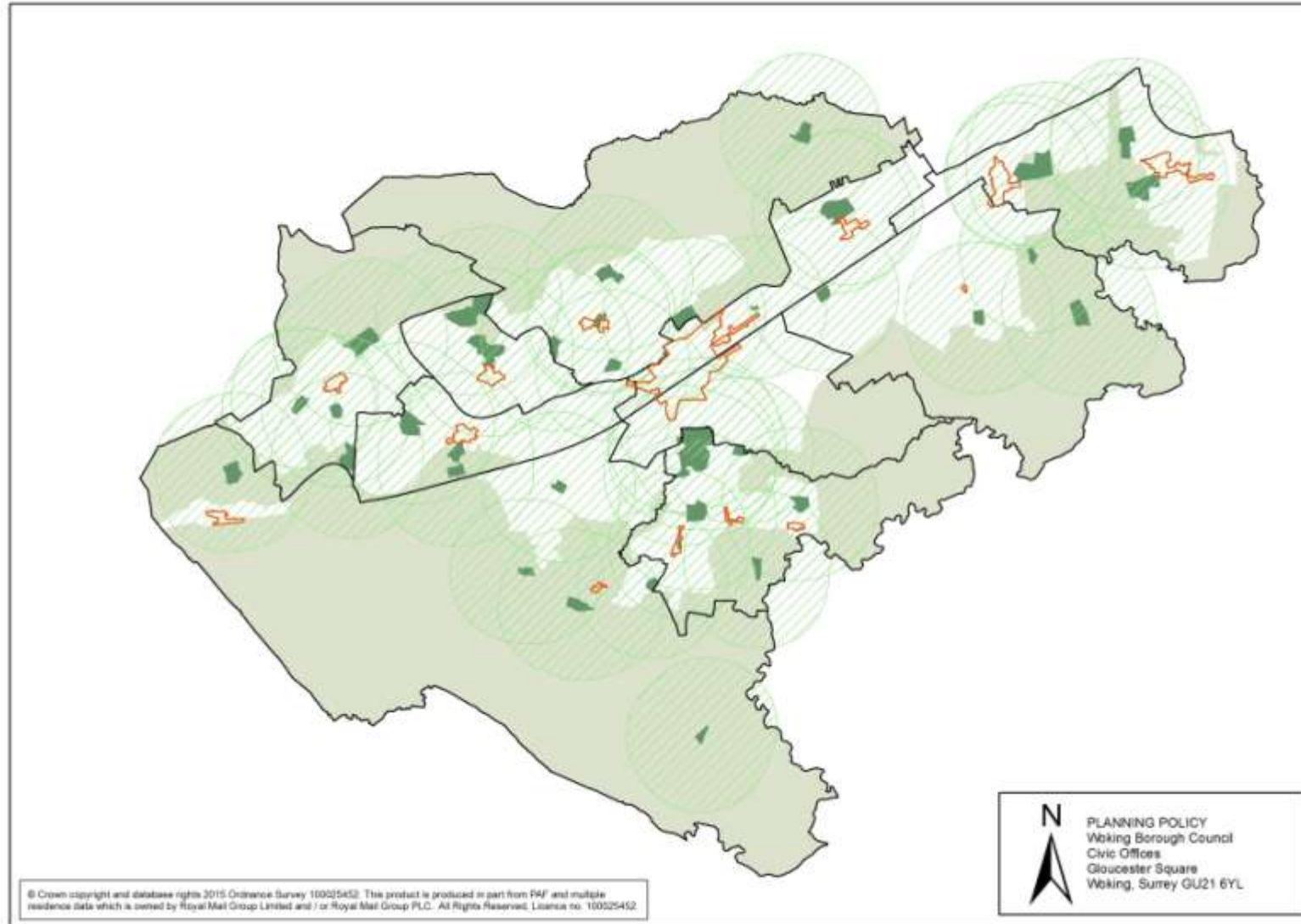


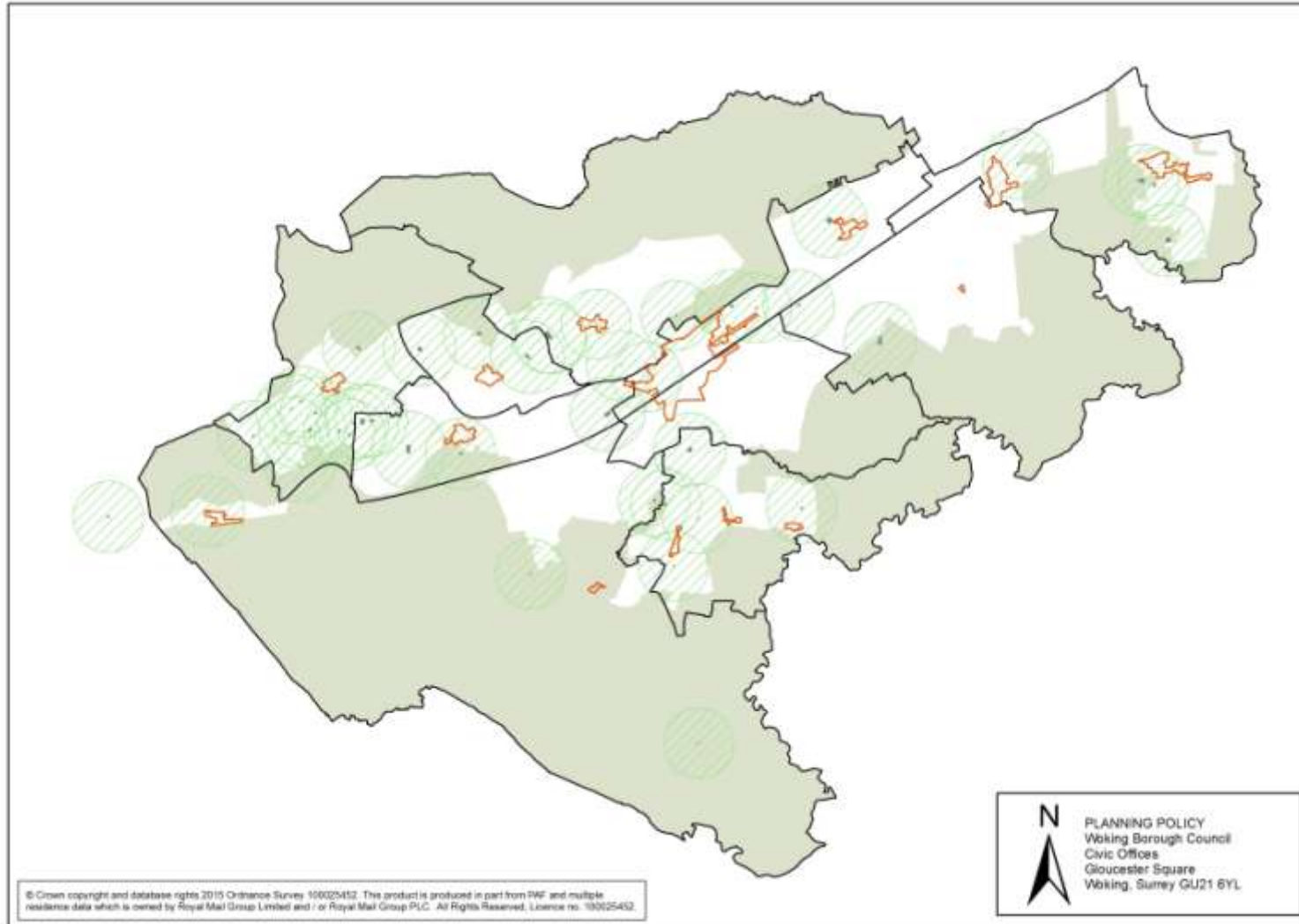


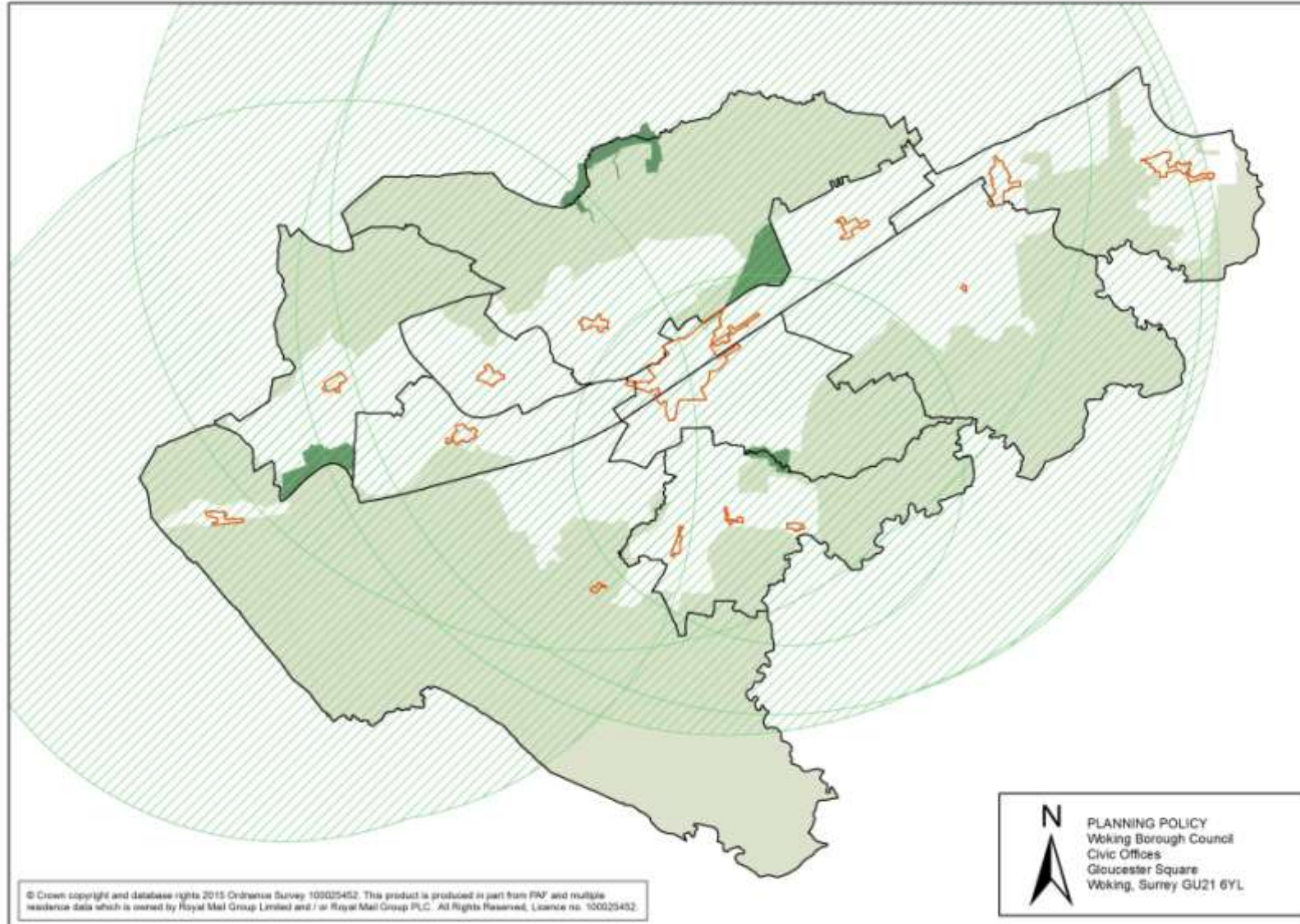












Appendix 5 – Completed and Current Improvements

Case study – the Hoe Stream



Hoe Valley scheme (WBC)

The Hoe Stream is found to the southern end of Woking Borough. The Hoe Valley Scheme has been a long term aspiration of the Council. Flooding around the Hoe Stream in 2000 affected many properties in Woking Borough. This event propelled the Council to take action.

Woking Borough Council in partnership with the Environment Agency commissioned a detail study of potential flood defences around the worst affected areas. In 2007 a full planning application comprising a mixed use development including flood defences was submitted (PLAN/2006/1237). The aims of the scheme were to enhance and extend the character of the Hoe Valley by integrating flood defences into the natural landscape.

The scheme was delivered by Thameswey Development Ltd on behalf of Woking Borough Council. It was completed in 2012 and was opened to the public. It is one of the biggest civil construction projects in Woking Borough. It creates a green corridor from Westfield Common through to Woking Park. The completed works include footpaths and cycle ways, wetlands, ponds, play area, green space.



Hoe Valley Scheme (WBC)

The delivery of the scheme ensures a reduced risk of flooding for 200 properties within the Borough and the provision of an attractive, accessible and sustainable green space within the Borough.

Case study – Wild flowers



Wild flowers (WBC)

In recent years Woking Borough Council has worked with local group Woking Local Agenda 21 to incorporate wildflowers into greenspace that would otherwise be unused. For example on selective roundabouts in the Borough and along highway verges.

Wildflowers are aesthetically pleasing; they are traditional in character and are associated with the rural landscape. The incorporation of these reinforce the link between the urban core and the wider countryside on the outskirts of the Borough.

Native wildflowers have declined in England due to various changes in agriculture. The establishment of these in the Borough makes a positive contribution to the wildflower population, but also have the added benefit of attracting native insects. Thereby maintaining a healthy eco-system.

Wildflowers can be difficult to establish as they require specific environment to thrive (generally low nutrient soil). However Woking Borough Council has successfully implemented these in various parts of the Borough including White Rose Lane, Hoe Valley Park, Westfield Common (around the woodland edge) and St Mary's Church Burial Ground.

It is the Council's intention to extend this project to other parts of the Borough in the next few years. Including around Council owned recreational grounds.

Case study – Biodiversity Opportunity Areas



Brookwood Lye (Pete Bickford, Surrey Wildlife Trust, www.surreywildlifetrust.org/reserves/brookwood-lye)

This is work being undertaken by Surrey Wildlife Trust on behalf of the Surrey Nature Partnership to embed the concept of Biodiversity Opportunity Areas (BOAs) plans across the county:

- BOAs consist of an assemblage of already recognised and protected sites for wildlife conservation inside a boundary that also includes further but as yet undesignated ‘Priority Habitat’ types.
- BOAs represent areas where improved habitat management, as well as efforts to restore and recreate Priority Habitats will be most effective in enhancing connectivity to benefit recovery of priority species in a fragmented landscape. They are the basis for achieving a coherent and resilient ecological network in Surrey.
- The aim is that they will assist local planning authorities to respond to national policy guidance (NPPF) on nature conservation and contribute directly to national Biodiversity 2020 targets.
- There are 50 BOAs covering 39% of Surrey and Policy Statements have been drafted for each. Four BOAs fall within Woking Borough: River Wey & tributaries; Woking Heaths (inc. Horsell Common); Ash, Brookwood & Whitmoor Heaths (inc. Brookwood Cemetery, Smarts Heath and Prey Heath); and Colony Bog, Bagshot Heath & Deepcut Heaths (inc. Sheets Heath and St John’s Lye)
- Each BOA Policy Statement contains a detailed profile of the area including geology, physiology; habitat type; species of principal importance; access; and socio-economic factors, as well as a set of measurable objectives and targets.

Case study – Improvements to Walking and Cycle network



Commercial Road, Woking (WBC)



Cycling in Woking (WBC)

The Woking Transport Strategy recognises the good level of existing walking and cycling infrastructure but does note there are gaps, particularly along the boundaries between Woking Borough and surrounding districts and Boroughs (such as Elmbridge, Guildford and Runnymede).

The Transport Strategy sets out various short, intermediate and long term schemes where the estimated cost of each is over £100k. The various schemes will require funding from a variety of sources.

The recommendations/schemes identified include improvements and extension to the walking and cycling network in Woking Borough including:

- Cycle parking at Woking railway station (216 places)
- Cycle improvements on approach to the railway station (Hillview Road; adjacent A3205; Barnsbury Estate)
- Improved networks between Borough boundaries (particularly to the south), through joint working between the authorities will seek to expand the network.
- Wayfinding signage to improve pedestrian movement in the town, with potential for expansion beyond that
- Cycle route Parvis Road between Byfleet and West Byfleet (Dartnell Avenue, Blackwood Close, Pinehurst Gardens).
- Cycle and walking improvements in West Byfleet Centre
- Cycle and walking improvements Maybury and Sheerwater
- Cycle and walking improvements Knaphill, St Johns and Brookwood (Redding Way-Basingstoke Canal, pedestrian and cycle bridge, crossing canal)
- Bike parking at key bus stops.

Case study – Thames Basin Heaths Special Protection Area

Much of the UK's lowland heathland has been lost since the early 19th century. The Thames Basin Heaths (TBH) were designated a SPA in 2005 by the UE Birds Directive. The Thames Basin Heaths SPA covers 8275 ha of heathland in Surrey, Berkshire and Hampshire.



Woodlark (James Sellen)

The component sites of the SPA are internationally important to the UK populations of three heathland-specific breeding birds: the Nightjar, Dartford warbler and Woodlark. Housing development in the locality of heathlands presents a threat to the birds as they nest around ground level and are very sensitive to recreational pressure, particularly dog walking and cat ownership, and elevated incidence of arson.

Woking Borough Council, other affected local authorities, Natural England, relevant Wildlife Trusts and the Royal Society for the Protection of Birds (RSPB) developed a proactive strategic partnership approach that allows for development whilst complying with the legislation protecting the SPA and its birds. The Joint Strategic Partnership Board (JSPB) plays an overseeing roll.

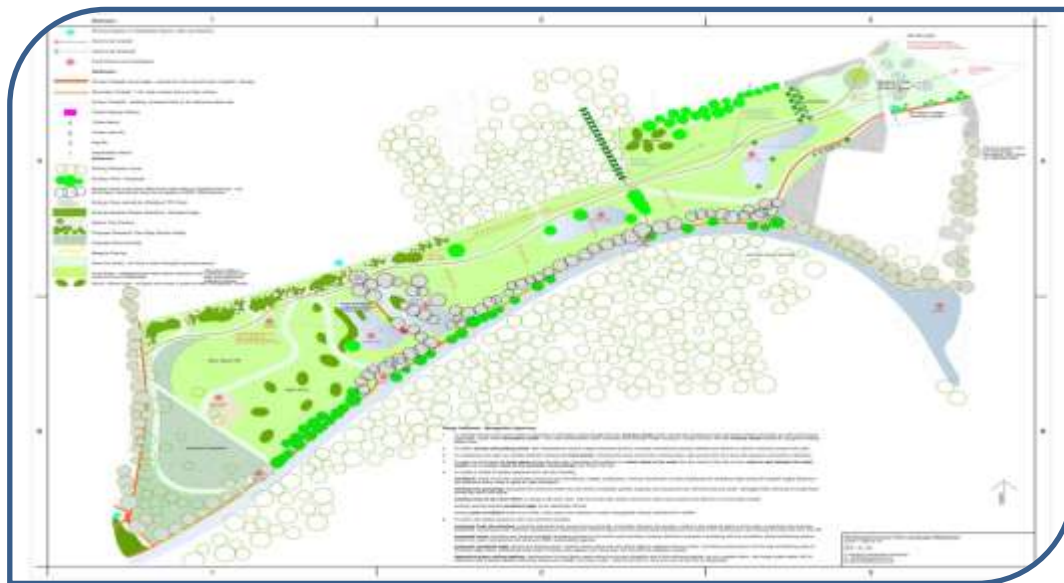
In summary, the approach involves providing sufficient additional green infrastructure – known as SANG – to dilute the added recreational pressure on the SPA (source: paraphrased from A Living Landscape for Surrey, Surrey Wildlife Trust)

SANG sites are provided for recreational use and are protected in perpetuity. They represent a valuable and growing green infrastructure resource in the Borough.

Woking Borough Council until recently implemented this SANG approach through its Thames Basin Heaths SPA Avoidance Strategy 2010-2015. This document continues to provide a helpful resource documenting the SPA mitigation. The strategy lists the five existing SANG sites and future proposed additional SANG. The Council is continuing to identify opportunities for future SANG provision in the area to support new housing development. The Draft Site Allocations DPD also featured a range of potential new SANG.

Since 1 April 2015, the developer's financial contributions to mitigating harm to the SPA is secured as part of the CIL for liable sites, rather than through a Section 106 (s106) legal agreement. The [Strategic Access Management and Monitoring](#) (SAMM) tariff is still required separately.

Case study - Brookwood Country Park SANG



Brookwood Country Park Landscape Management Plan (Footprint Ecology)

Woking Borough currently has five areas of operational SANG. This is greenspace designated to mitigate against the impact of residential development on the Thames Basin Heaths Special Protection Area. The SANG offers an alternative greenspace to visitors, attracting them away from the SPA.

Brookwood Country Park is one of the three parks and four SANGs in the Borough. The park is a semi-natural green space. A survey was carried out in October 2011 following works undertaken on the park including the installation of the majority of the footpaths identified in a masterplan. The range of activities visitors undertook included cycling, jogging, and fishing - although the main activity was dog walking. Respondents to the visitor survey had indicated that they had spent more time in the park following improvements to path surfaces and vehicular access. Most responses were positive and complimentary to how well the park is managed. This is emphasised by the assessment of the site against the Natural England criteria for assessing SANG. It met most of the criteria with some minor points relating to signage (which was due to be installed later in the programme of works) and car parking. The Survey shows that the site is working effectively as a SANG.

The Council is working closely with Natural England and other stakeholders to bring forward additional areas for SANG to meet future residential growth projected for the Borough.

Case study - Operation Owl

In order to conserve and encourage the owl population in the Borough, the Council partnered with Surrey Wildlife Trust, Horsell Common Preservation Society and Woking Local Action 21 to identify where the owl hot spots were in the Borough. The identification of these areas then enabled the installation of numerous owl boxes across Woking Borough. The Council provided the initial funds of £3,000 to kick start the project. Over 40 owl boxes have now been installed across the Borough with more planned.



Owl (Woking Local Action 21)



Owl box installation (Woking Local Action 21)

Appendix 6 - Glossary and Abbreviations

Term	Definition
Active travel	Indicates travel by walking, jogging, running or cycling.
Amphibian and Reptile Conservation (ARC)	A national wildlife charity committed to conserving amphibians and reptiles and saving the disappearing habitats on which they depend. www.arc-trust.org/
Biodiversity	Biological diversity – or biodiversity – is the variety of life on Earth, including plants, animals and micro-organisms which, together, interact in complex ways with the inanimate environment to create living ecosystems.
Biodiversity Action Plan (BAP)	A biodiversity action plan (BAP) is an internationally recognised plan to address threatened species and habitats and is designed to protect and restore biodiversity. Prior to 2012, the Surrey Biodiversity Partnership implemented the Surrey Biodiversity Action Plan. The Partnership has now become the Biodiversity Working Group of the Surrey Nature Partnership and it is producing Biodiversity Opportunity Area Policy statements to align with the outcomes in Biodiversity 2020.
Biodiversity offset	Establishing the biodiversity impacts from a development and allowing these to be rectified on another area of land.
Biodiversity Opportunity Area Policy statements	In Surrey these are replacing the Surrey Biodiversity Action Plan.
Biodiversity security	Ensuring the breadth and ecosystems for wildlife and plant species in the Borough for future generations.
Biodiversity and Green Infrastructure Action Plan (Biodiversity and Green Infrastructure Action Plan will set out the actions through which the Council, partner organisations, local residents and businesses can achieve the biodiversity and green infrastructure aims of this strategy.
Biodiversity Opportunity Area (BOA)	Areas where improved habitat management, as well as efforts to restore and recreate Priority Habitats will be most effective in enhancing connectivity to benefit recovery of priority species in a fragmented landscape.
Blue corridor	Any water course, natural (river, stream) or man-made (canal)
Building Research Establishment Environmental Assessment Method (BREEAM)	The most widely used means of reviewing and improving the environmental performance of buildings.
Community Infrastructure Levy (CIL)	CIL allows local authorities in England and Wales to raise funds from developers undertaking new building projects in their area. The money can be used to fund a wide range of infrastructure that is needed because of development. This includes new or safer road schemes, flood defences, schools, hospitals and other health and

	social care facilities, park improvements, green spaces and leisure centres. Woking Borough introduced CIL in April 2015.
Development Plan Document (DPD)	Local Development Framework (LDF) documents containing the core planning policies and proposals. These are subject to independent examination. Woking Borough Council has or is intending to prepare the following DPDs: Core Strategy, Development Management Policies, Site Allocations DPD, Proposals Map.
Ecosystem	A community of life forms together with their physical environment (such as rocks and soil) viewed as a system of interacting and interdependent relationships, including such processes as the through-flow of energy and the cycling of chemicals through both living and non-living components of the system
European Union (EU)	The EU is a politico-economic union of 28 member states that are located primarily in Europe. The EU operates through a system of supranational institutions and intergovernmental-negotiated decisions by the member states.
Favourable Conservation Status	The concept of <i>favourable conservation status</i> is central to the EC Habitats Directive. Article 2 which sets out the aim of the Directive, states that: 'Measures taken pursuant to this Directive shall be designed to maintain or restore, at favourable conservation status, natural habitats and species of wild fauna and flora of Community interest.'
Green corridor	A strip of land that provides sufficient habitat to support wildlife, often within an urban environment, allowing the movement of wildlife along it. Common green corridors include railway embankments, river banks and roadside grass verges.
Green (or living) roof/wall	Where the visible layer of a building's roof is composed of vegetation. Sometimes also known as living roofs/wall.
Green infrastructure	A network of multi-functional green space, urban and rural, which is capable of delivering a wide range of environmental and quality of life benefits for local communities.
Green walls	Specially constructed vertical planting screens, often supported by irrigation systems.
Greenways	Off-road routes through towns, sometimes linking parks, playing fields and riverside walks.
Hectare (ha)	A metric unit of square measure, equal to 100 acres (2.471 acres or 10,000 square metres).
Hibernacula	A place of abode in which a creature seeks refuge, such as a bear using a cave to overwinter or where insects or amphibians may hibernate to survive the winter.
Horsell Common Preservation Society (HCPS)	Horsell Common is one of only a handful of privately owned areas of common land in England with public access. The Horsell Common Preservation Society Trustees manage the common.

	www.horsellcommon.org.uk/
International Council for Local Environmental Initiatives (ICLEI)	An international association of local governments and national and regional local government organizations that have made a commitment to sustainable development.
Joint Strategic Partnership Board (JSPB)	Partnership of local authorities and expert organisations, such as Natural England, coordinating and overseeing the SANG approach to mitigating the impacts of development onto the Thames Basin Heaths heathland.
Landscape and Visual Impact Assessment (LVIA)	The technique of landscape and visual impact assessment (LVIA) is used to assess the effects of change on the landscape. For example, a new development. It is used to help locate and design the proposed change, so that negative landscape effects are avoided, reduced or offset. The two aspects of the assessment - landscape and visual effects - are independent but related.
Local Green Space	Local Green Space designation is a way to provide special protection against development for green areas of particular importance to local communities. (source: National Planning Practice Guidance, http://planningguidance.communities.gov.uk/blog/guidance/open-space-sports-and-recreation-facilities-public-rights-of-way-and-local-green-space/local-green-space-designation/#paragraph_005)
Local Nature Reserve (LNR)	Local authorities can create local nature reserves (LNRs) on land controlled by them. The LNR must be cared for and its natural features protected. The land must be accessible for any visitors. The site chosen may be locally important for wildlife; geology; education; and/ or enjoyment (without disturbing wildlife). www.gov.uk/guidance/create-and-manage-local-nature-reserves
Natural capital	Natural capital refers to the elements of nature that produce value (directly and indirectly) to people, such as the stock of forests, rivers, land, minerals and oceans. (cited in Naturally Richer https://surreynaturepartnership.files.wordpress.com/2015/11/naturally-richer-a-natural-capital-investment-strategy-for-surrey.pdf)
National Nature Reserve (NNR)	National Nature Reserves (NNRs) established to protect some of our most important habitats, species and geology, and to provide 'outdoor laboratories' for research. www.gov.uk/government/collections/national-nature-reserves-in-england
National Planning Policy Framework (NPPF)	The National Planning Policy Framework sets out government's planning policies for England and how these are expected to be applied.
Nature	The phenomena of the physical world collectively, including plants, animals, the landscape, and other features and products of the earth, as opposed to humans or human creations.

Natural Environment and Rural Communities Act (NERC)	An Act placing a statutory duty on all public authorities to have regard to conserving biodiversity and emphasises the important role they play.
Natural flood (risk) management	Working with natural processes to take action to manage flood risk by protecting, restoring and emulating the natural regulating function of catchments, rivers, floodplains and coasts. This could for example involve using land to temporarily store flood water away from high risk areas, reconnecting rivers to their floodplains and lengthening watercourses to a more natural alignment. Reforesting floodplains will also help to slow run-off and increase infiltration. In urban areas green roofs, permeable paving, surface water attenuation ponds, opening up and realigning watercourses, and establishing blue corridors are equivalent examples.
Royal Horticultural Society (RHS)	Britain's Gardening Charity, founded in 1804 to encourage the science, art, and practice of horticulture in all its branches. RHS Wisley adjoins Woking Borough and is one of four gardens in the UK run by the Society.
Section 106 (s106) agreement	Section 106 (S106) of the Town and Country Planning Act 1990 allows a local planning authority (LPA) to enter into a legally-binding agreement or planning obligation, with a land developer over a related issue. This obligation is sometimes termed as a 'Section 106 Agreement'.
Sites of Nature Conservation Importance (SNCI)	Designations applied to the most important nature conservation sites in the local area. Sites designated for both their ecology and geological interest. They are of lesser quality than the nationally or internationally important Sites of Special Scientific Interest (SSSI).
Sites of Nature Conservation Importance (SNCI)	Surrey's SNCIs protect those sites of county, regional or national importance for wildlife that are not covered by these statutory designations. Although not a statutory designation, SNCIs are protected through the planning process.
Special Area of Conservation (SAC)	An area of international importance because they are home to rare or endangered species of plants or animals (other than birds). SACs are designated under the European legislation, the Habitats Directive.
Special Protection Area (SPA)	A statutory protected habitat for wild birds under European legislation. In this area, the Thames Basin Heaths SPA
Site of Special Scientific Interest (SSSI)	Sites of Special Scientific Interest (SSSIs) protect the nationally important sites. An area of land or water notified by statutory conservation agency under the Wildlife and Countryside Act 1981 as being of national importance for nature or geological conservation.
Site Waste Management Plan (SWMP)	A SWMP sets out how resources will be managed and waste controlled at all stages during a construction project. A SWMP covers: <ul style="list-style-type: none"> • Who will be responsible for resource management. • What types of waste will be generated. • How the waste will be managed – will it be reduced, reused or recycled?

	<ul style="list-style-type: none"> • Which contractors will be used to ensure the waste is correctly recycled or disposed of responsibly and legally. • How the quantity of waste generated by the project will be measured. <p>If you are involved in a construction or demolition project, in the UK, worth £300,000 or more, you have a legal duty to complete a Site Waste Management Plan (SWMP). If your project is worth £500,000 or more, the requirements become more detailed.</p> <p>(Source: http://www.netregs.org.uk/pdf/SWMP_simple_guide.pdf)</p>
Statement of Community Involvement (SCI)	The Statement of Community Involvement (SCI) sets out how and when the Council will involve the community and other interested people and organisations ('stakeholders') in the preparation of its planning policy documents, and in the consideration of planning applications in Woking Borough.
Strategic Access Management and Monitoring (SAMM)	Measures to monitor both visitors and the bird species to understand the effectiveness of the Thames Basin Heaths SPA mitigation.
Strategic Flood Risk Assessment (SFRA)	A Strategic Flood Risk Assessment is a study carried out by one or more local planning authorities to assess the risk to an area from flooding from all sources, now and in the future, taking account of the impacts of climate change, and to assess the impact that land use changes and development in the area will have on flood risk. (source http://planningguidance.communities.gov.uk/blog/guidance/flood-risk-and-coastal-change/strategic-flood-risk-assessment/)
Suitable Alternative Natural Greenspace (SANG)	Land that is accessible for public recreation and meets the requirements of visitors who would use the SPA.
Surrey Amphibian and Reptile Group (SARG)	A non-profit-making wildlife conservation organisation, based in the United Kingdom's county of Surrey. SARG focuses on the care and preservation of wild, native reptiles and amphibians. http://www.surrey-arg.org.uk/SARG/00100-AboutSARG/SARG2intro.php
Surrey Nature Partnership (SyNP)	The Surrey Nature Partnership is a Local Nature Partnership, established in 2012. Local Nature Partnerships have been set up across the UK with the purpose of championing the value of the natural environment in decision making at all levels.
Sustainable	This can refer to development or the use of a resource – its use or existence must be able to continue without being detrimental to the environment, or endangering the resource for its use by future generations.
Sustainable Drainage Systems (SuDS)	Drainage solutions that provide an alternative to the direct channelling of surface water through networks of pipes and sewers to nearby watercourses. They mitigate the difficulty of rain prevented from infiltrating through to ground water because of hard surfacing, by

	replicating natural processes to manage rainfall. .SuDS aim to reduce surface water flooding, improve water quality and enhance the amenity and biodiversity value of the environment. For more information, see www.woking.gov.uk/planning/service/suds
Thames Basin Heaths Special Protection Area	Local heathland protected by European law as valued habitat for ground-nesting birds such as the Woodlark, Nightingale and Dartford Warbler.
Tree Preservation Order (TPO)	A TPO is made by the local planning authority (the Council) to protect specific trees or particular woodland from deliberate damage and destruction. TPOs prevent the felling, lopping, topping, uprooting or otherwise wilful damaging of trees without the permission of the local planning authority.
Woking Local Action 21	A voluntary group of individuals taking action locally on issues relating to climate change and sustainability. Established in 1994. Supported by Woking Borough Council.
WBC	Woking Borough Council
Wey Landscape Partnership (WLP)	WLP is a multi agency partnership that aims to improve the Wey catchment's water environment, of which the Surrey Wildlife Trust is the Chair. The WLP is currently a developing strategy for the restoration of the river Wey catchment as a whole, in addition to a strategy for the management of non-native invasive species.
Wildlife	Living things and especially mammals, birds, and fishes that are neither human nor domesticated. Wild animals collectively; the native fauna (and sometimes flora) of a region.

Appendix 7 – References and Where to find out more

References

Adapting cities for climate change: The Role of the Green Infrastructure (Gill et al)
citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.178.8370&rep=rep1&type=pdf

Cultural Strategy (Woking Borough Council, 2004)

www.woking.gov.uk/council/strategies/culturalstrategy/culturalstrategy

Making Space for Nature: A review of England's Wildlife Sites and Ecological Network (chaired by Professor Sir John Lawton, 2010) (The Lawton Report)

www.gov.uk/government/uploads/system/uploads/attachment_data/file/218690/201009space-for-nature.pdf

Woking 2027 Core Strategy (Woking Borough Council, 2012)

www.woking2027.info/corestrategy

Woking 2050 (Woking Borough Council, 2015)

www.woking.gov.uk/environment/climate/Greeninitiatives/climatechangestrategy

Woking Biodiversity and Green Infrastructure Action Plan (Woking Borough Council in partnership with Woking Local Action 21 Group)

Woking Transport Strategy (Surrey County Council, 2014) www.surreycc.gov.uk/roads-and-transport/surrey-transport-plan-ltp3/surrey-transport-plan-consultations-on-the-plan/local-transport-strategies-and-forward-programmes

Surrey Landscape Character Assessment (Surrey County Council)

<http://www.surreycc.gov.uk/environment-housing-and-planning/countryside/countryside-strategies-action-plans-and-guidance/landscape-character-assessment>

Landscape Institute Position Statement Green Infrastructure: connected and multifunctional landscapes

<http://www.landscapeinstitute.org/PDF/Contribute/GreenInfrastructurepositionstatement13May09.pdf>

Landscape Institute Public Health and Landscape: Creating healthy places

http://www.landscapeinstitute.org/PDF/Contribute/PublicHealthandLandscape_CreatingHealthyPlaces_FINAL.pdf

Where to find out more

Biodiversity (International, European, UK and local)



Seedling (WBC)



Westfield Common (WBC)

A Living Landscape for Surrey (Surrey Wildlife Trust) www.surreywildlifetrust.org/what-we-do/living-landscapes

Berne Convention on the Conservation of European Wildlife and Natural Habitats (1979) www.coe.int/t/dg4/cultureheritage/nature/bern/default_en.asp

Biodiversity 2010: A strategy for England's wildlife & ecosystem services (2011) www.gov.uk/government/publications/biodiversity-2020-a-strategy-for-england-s-wildlife-and-ecosystem-services

Biodiversity Opportunity Areas: the basis for realising Surrey's ecological network (Surrey Nature Partnership, December 2015)

Biodiversity 2020: A strategy for England's wildlife and ecosystem services (DEFRA, 2011) (The Biodiversity Strategy for England 2020) www.gov.uk/government/publications/biodiversity-2020-a-strategy-for-england-s-wildlife-and-ecosystem-services

Conservation of Habitats and Species Regulations 2010 (the Habitats Regulations) www.legislation.gov.uk/ukxi/2010/490/contents/made

Convention of Biological Diversity www.cbd.int/convention/

Countryside and Rights of Way (CRoW) Act 2000 www.legislation.gov.uk/ukpga/2000/37/contents

EC Birds Directive (Council Directive 79/409/EEC on the conservation of wild birds) ec.europa.eu/environment/nature/legislation/birdsdirective/index_en.htm

EU Biodiversity Strategy to 2020 – towards implementation ec.europa.eu/environment/nature/biodiversity/comm2006/2020.htm

Guidance for Local Authorities on Implementing the Biodiversity Duty (DEFRA, 2007)
www.gov.uk/government/uploads/system/uploads/attachment_data/file/69287/pb12584-la-guid-english-070510.pdf

Habitats Directive EC Directive 92/43/EEC Conservation of Natural Habitats and of Wild Flora and Fauna ec.europa.eu/environment/nature/legislation/habitatsdirective/index_en.htm

Hedgerow Regulations 1997 www.legislation.gov.uk/ukxi/1997/1160/contents/made

Making Space for Nature: A review of England's Wildlife Sites and Ecological Network (chaired by Professor Sir John Lawton, 2010) (The Lawton Report)
www.gov.uk/government/uploads/system/uploads/attachment_data/file/218690/201009space-for-nature.pdf

Nagoya Protocol (2010) www.cbd.int/abs/

National Parks and Access to the Countryside Act 1949 (designates LNRs)
www.legislation.gov.uk/ukpga/Geo6/12-13-14/97#pt3

Natural Environment and Rural Communities (NERC) Act 2006
www.legislation.gov.uk/ukpga/2006/16/contents

Natural Environment White Paper (2011) www.gov.uk/government/publications/the-natural-choice-securing-the-value-of-nature

Policy paper 2010 to 2015 government policy: biodiversity and ecosystems (DEFRA, Natural England, 2015) www.gov.uk/government/publications/2010-to-2015-government-policy-biodiversity-and-ecosystems

Surrey (Local) Biodiversity Action Plan (LBAP)
www.elmbridge.gov.uk/documents/detail.htm?pk_document=25416

UK Post-2010 Biodiversity Framework (Natural England) ncc.defra.gov.uk/page-6189

Wildlife and Countryside Act 1981 (as amended)
www.legislation.gov.uk/ukpga/1981/69/contents

Woking Sites of Nature Conservation Importance (SNCIs) Summary Report (2005) (Surrey Wildlife Trust) <http://www.woking.gov.uk/planning/policy/ldfresearch>

Planning, design and construction



McLaren Woking (WBC)



WWF headquarters Woking (WBC)

Beauty In My Back Yard (BIMBY) (Prince's Foundation) www.bimby.org.uk/

Biodiversity by Design (Town and Country Planning Association)
www.tcpa.org.uk/pages/biodiversity-by-design.html

Biodiversity and Planning in Surrey (Surrey Nature Partnership, May 2014)
surreynaturepartnership.org.uk/our-work/

British Standard, Biodiversity - Code of Practice for planning and development BS 42020
(British Standards Institution, 2013)
shop.bsigroup.com/ProductDetail/?pid=000000000030258704

Character Study (The Landscape Partnership, 2010)
www.woking.gov.uk/planning/policy/ldfresearch/charcstu

Circular 06/05: Biodiversity and Geological Conservation - Statutory Obligations and their impact within the Planning System
www.gov.uk/government/uploads/system/uploads/attachment_data/file/7692/147570.pdf

Climate Change supplementary planning document (SPD, Woking Borough Council, 2013)
www.woking2027.info/supplementary/climatechangespd

Design SPD (Woking Borough Council, 2015)
www.woking2027.info/supplementary/designspd

European Protected Species and the Planning Process (Natural England, 2010)
publications.naturalengland.org.uk/publication/113030

Light Pollution draft supplementary planning guidance
www.woking.gov.uk/planning/policy/localplan1999/lightpollution

Local Sites - Guidance on their Identification, Selection and Management (DEFRA, 2006)
www.nebiodiversity.org.uk/docs/20.pdf

National Planning Policy Framework (NPPF)
www.gov.uk/government/uploads/system/uploads/attachment_data/file/6077/2116950.pdf

Planning Naturally: Spatial planning with nature in mind: in the UK and beyond (RSPB, RTPI, 2013) www.cieem.net/data/files/Resource_Library/News/Planning_Naturally.pdf

Planning Practice Guidance planningguidance.planningportal.gov.uk/

South East Plan (saved policy NRM6 Thames Basin Heaths Special Protection Areas) webarchive.nationalarchives.gov.uk/20100528142817/http://www.gos.gov.uk/gose/planning/regionalplanning/815640/

Woking 2027 Core Strategy (Woking Borough Council, 2012) www.woking2027.info/corestrategy

Working with wildlife: guidance for the construction industry (J Newton, B Nicholson, R Saunders, R Willets and C Williams of The Ecology Consultancy, R Venables of Crane Environmental, 2011) www.ciria.org/

Survey and assessment



Native plants and insects (WBC)

Ecological Impact Assessment Guidelines (CIEEM)

www.cieem.net/data/files/Resource_Library/Technical_Guidance_Series/EcIA_Guidelines/TGSEcIA-EcIA_Guidelines-Terrestrial_Freshwater_Coastal.pdf

Guidelines for Landscape and Visual Impact Assessment (Landscape Institute, third edition, 2013) www.landscapeinstitute.co.uk/knowledge/GLVIA.php

The Town and Country Planning (Environmental Impact Assessment) (England and Wales) Regulations 1999 www.legislation.gov.uk/uksi/1999/293/contents/made

Trees, woodland and hedgerows



Street trees, Old Woking and Woking (WBC)



Jubilee Square, Woking (WBC)

Countryside Stewardship: woodland support

www.gov.uk/government/collections/countryside-stewardship-woodland-support

Hedgeline

www.hedgeline.org.uk

Inventory of Surrey's Ancient Woodland (Surrey Wildlife Trust, 2011)

www.waverley.gov.uk/download/downloads/id/2640/ancient_woodland

Natural England and Forestry Commission standing advice for local planning authorities for developments near ancient woodland and veteran trees. www.gov.uk/guidance/ancient-woodland-and-veteran-trees-protection-surveys-licences

Town and Country Planning Act 1990: Tree Preservation Orders

www.legislation.gov.uk/ukpga/1990/8/contents#pt8-ch1

Town and Country Planning (Tree Preservation) (England) Regulations 2012

www.legislation.gov.uk/uksi/2012/605/made

Individual wildlife species



Bee on teasel (WBC)



Insect house (WBC)

Natural England / DEFRA wildlife and habitat conservation advice for particular species, including Great Crested Newts, birds, mammals. See www.gov.uk/topic/environmental-management/wildlife-habitat-conservation

Natural England and DEFRA standing advice for local planning authorities for particular species. See www.gov.uk/guidance

Birds

Nest box advice (RSPB)

www.rspb.org.uk/makeahomeforwildlife/advice/helpingbirds/nestboxes/index.aspx

Mammals

Bats and Buildings - guidance for built environment professionals, consultants, building owners and managers on the conservation actions to promote and cater for bats in buildings (The Bat Conservation Trust, 2012)

www.bats.org.uk/publications_download.php/1135/Bats_and_Buildings_2012_web.pdf

Bats and breathable roofing membranes

<http://www.batsandbrms.co.uk/background.php>

Dormouse Conservation Handbook (Natural England, 2006) ptes.org/wp-content/uploads/2014/06/Dormouse-Conservation-Handbook.pdf

Landscape and urban design for bats and biodiversity (Bat Conservation Trust, 2012) – www.bats.org.uk/pages/landscapedesign.html

Best Practice Guidance - Managing Land as a Foraging Resource for Badgers (The Highland Council, 2006)

www.highland.gov.uk/downloads/file/2642/badger_best_practice_guidance_managing_land_as_a_foraging_resource_september_2006

Protection of Badgers Act 1992 www.legislation.gov.uk/ukpga/1992/51/contents

Insects

Help save the Bumblebee...get more buzz from your garden (B00, Natural England, 2006) publications.naturalengland.org.uk/publication/73030?category=130041

Amphibians

Favourable Conservation Status project

The pilot Natural England and Woking Borough Council project concerns the Great Crested Newt (full details will follow in an update of this supporting information).

Great Crested Newt Conservation Handbook (T Langton, C Beckett and J Foster, Froglife, 2001) www.froglife.org/wp-content/uploads/2013/06/GCN-Conservation-Handbook_compressed.pdf

Designations, habitats and landscapes



Play area, Horsell (WBC)



Grass snake (James Sellen)

A Community Right to Beauty: giving communities the power to shape, enhance and create beautiful places, spaces and development (ResPublica, 2015) www.respublica.org.uk/wp-content/uploads/2015/07/Right-to-Beauty-Final-1.pdf

European Landscape Convention (Council of Europe) www.coe.int/en/web/landscape

Nature Improvement Areas (The Wildlife Trusts) www.wildlifetrusts.org/NIA

Priority Habitat Inventory (Natural England dataset) magic.defra.gov.uk/MagicMap.aspx (see under 'Habitats and Species')

SSSI database (Natural England) www.sssi.naturalengland.org.uk/Special/sssi/search.cfm

Surrey Heathland Project www.surreycc.gov.uk/environment-housing-and-planning/countryside/looking-after-the-countryside/countryside-management-projects/heathland-partnership

Thames Basin Heaths SPA Avoidance Strategy 2010-15 (Woking Borough Council, 2010) www.woking.gov.uk/planning/policy/ldf/tbhspa/spastrategy2010

UK Biodiversity Action Plan (BAP) list of priority habitats (JNCC) jncc.defra.gov.uk/page-5706

European Landscape Convention (Council of Europe, 2000) conventions.coe.int/Treaty/en/Treaties/Html/176.htm

Water quality, flood risk and sustainable drainage



Gresham Mill, Old Woking (WBC)



Rive Ditch, Woking (WBC)

Catchment Data Explorer (Environment Agency)
(Information and the Water Framework Directive classification of waterbodies in the Borough) <http://environment.data.gov.uk/catchment-planning/>

EU Water Framework Directive (2000) ec.europa.eu/environment/water/water-framework/index_en.html

Opportunity mapping for woodland creation to reduce diffuse water pollution and flood risk in England and Wales (Forestry Research, 2014)

[www.forestry.gov.uk/pdf/FR_Broadmeadow_NOM_EW_2014.pdf/\\$FILE/FR_Broadmeadow_NOM_EW_2014.pdf](http://www.forestry.gov.uk/pdf/FR_Broadmeadow_NOM_EW_2014.pdf/$FILE/FR_Broadmeadow_NOM_EW_2014.pdf)

Strategic Flood Risk Assessment (SFRA, 2009)
www.woking.gov.uk/planning/policy/ldfresearch An update of the SFRA will be published shortly.

Susdrain resources for delivering SuDS (Susdrain) www.susdrain.org/delivering-suds/
Sustainable Drainage - Cambridge Design and Adoption Guide (Cambridge City Council)
www.cambridge.gov.uk/sites/default/files/docs/SUDS-Design-and-Adoption-Guide.pdf

Sustainable drainage systems – maximising the potential for people and wildlife (RSPB, WWT) www.rspb.org.uk/Images/SuDS_report_final_tcm9-338064.pdf

Water. People. Places. - a guide for master planning sustainable drainage into developments. Prepared by the Lead Local Flood Authorities of the South East of England
www.kent.gov.uk/_data/assets/pdf_file/0018/12429/SE7-suds-masterplanning_low_res_Part1.pdf

Green infrastructure and its accessibility



Playing pitch, Goldsworth Park (WBC)



Roadside verge (WBC)

An analysis of accessible natural greenspace provision in the South East (Patrick McKernan, Forestry Commission and Matthew Grose, High Weald AONB Unit)

[www.forestry.gov.uk/pdf/acnratgreenrep-report.pdf/\\$FILE/acnratgreenrep-report.pdf](http://www.forestry.gov.uk/pdf/acnratgreenrep-report.pdf/$FILE/acnratgreenrep-report.pdf)

Countryside and Rights of Way (CRoW) Act 2000

www.legislation.gov.uk/ukpga/2000/37/contents

Green Infrastructure: An integrated approach to land use (Landscape Institute, 2013)

www.landscapeinstitute.co.uk/PDF/Contribute/2013GreenInfrastructureLIPositionStatement.pdf

Green Infrastructure's contribution to economic growth: a review (Defra and Natural England, 2013) www.shu.ac.uk/research/cresr/sites/shu.ac.uk/files/green-infrastructure-contribution-growth.pdf

Green Infrastructure Guidance (NE176, Natural England, 2009)

publications.naturalengland.org.uk/publication/35033

Nature Nearby – Accessible Natural Greenspace Guidance (Natural England, 2010)

www.ukmaburbanforum.co.uk/documents/other/nature_nearby.pdf

Open Space, Sports and Recreation Facilities Audit (Woking Borough Council, 2008)

www.woking.gov.uk/planning/policy/ldfresearch/ppg17

Planning for a healthy environment – good practice guidance for green infrastructure and biodiversity (Town & Country Planning Association, The Wildlife Trusts, 2012)

www.tcpa.org.uk/data/files/TCPA_TWT_GI-Biodiversity-Guide.pdf

South East Green Infrastructure Partnership seqip.org/

Soil quality, sustainable construction and waste



Thrush (WBC)



Woodland floor (WBC)

Construction Code of Practice for the Sustainable Use of Soils on Construction Sites (BIS, DEFRA, WRAP, 2009)

www.gov.uk/government/uploads/system/uploads/attachment_data/file/69308/pb13298-code-of-practice-090910.pdf

Green Roof Toolkit (Environment Agency)

Living Roofs and Walls: Technical Report Supporting London Plan Policy (Greater London Authority, 2008) www.london.gov.uk/sites/default/files/living-roofs.pdf

Recycle Surrey www.recycleforsurrey.org.uk/

Safeguarding our soils: A Strategy for England (DEFRA, 2011)

www.gov.uk/government/publications/safeguarding-our-soils-a-strategy-for-england

UK Green Building Council Portal www.ukgbc.org/

Adapting to Climate change



Millmoor fields, Old Woking (WBC)



Bee-keeping group, Hampshire (WBC)

Adapting to Climate Change: a Checklist for Developers (Climate Change South East, 2005)
www.climatesoutheast.org.uk/images/uploads/Adaptation_Checklist_for_Development_Nov_2005.pdf

Recreational open space and health

Active by Design (Design Council) www.designcouncil.org.uk/resources/guide/active-design-designing-places-healthier-lives

Investing in Nature

Naturally richer: A Nature Capital Investment Strategy for Surrey (2015)
<http://surreynaturepartnership.org.uk/news-4/>

Useful contacts

[Amphibian and Reptile Conservation Trust](#)

[Basingstoke Canal Authority](#)

[Basingstoke Canal Society](#)

[Bat Conservation Trust](#)

[Butterfly Conservation](#)

[Environment Agency](#)

[Freshwater Habitats Trust](#)

[Mammal Society](#)

[Natural England](#)

[Royal Horticultural Society](#)

[Royal Society for the Protection of Birds \(RSPB\)](#)

[Surrey Amphibian and Reptile Group \(SARG\)](#)

[Surrey Bat Group](#)

[Surrey Biodiversity Information Centre](#)

[Surrey Botanical Society](#)

[Surrey County Council](#)

[Surrey Hills AONB](#)

[Surrey Nature Partnership](#)

[Surrey Wildlife Trust](#)

[Woking Borough Council](#)

[Woking Local Action 21](#)

[Butterfly Conservation](#)

[Mammal Society](#)

[Surrey Bird Club](#)

[Surrey Bat Group](#)

[Town and Country Planning Association](#)

[West Surrey Badger Group](#)

[Farming & Wildlife Advisory Group \(South East\)](#)

[Surrey Botanical Society](#)

[Wey Landscape Partnership \(WLP\)](#)

[Woodland Trust](#)

Appendix 8 - What you can do

This section provides a series of checklists for different users. They set out how local people and community groups, land managers and developers can contribute to the aims of this strategy, to benefit people, the economy and wildlife in the Woking Borough.



Ideas for residents, community groups and business

The Woking 2050 strategy 'Home is Where the Heart Is' section emphasises the many ways in which our lives can impact on the environment and how by making informed choices we can reduce these impacts. Whether you are creating a new or updating an existing home, garden or business premises, or writing a Neighbourhood Plan for your area, all steps to help wildlife and create better habitats and green spaces will make a difference. Small, incremental actions make a big contribution over time and encourages others to do likewise. Here are just a few suggestions – we encourage you to give these a try!

Living Spaces

Aim - restore and expand habitats for priority species enhancing the links between these (reducing fragmentation).

- Planting trees is one way to take positive action
- Participate in clean-up activities in your neighbourhood – litter can kill wildlife
- Put up bird boxes, bird and hedgehog houses, swift bricks or build an insect hotel
- Naturalise areas by leaving piles of dead wood or grass Clippings (see <http://www.rspb.org.uk/makeahomefor/wildlife/advice/gardening/deadwood.aspx>)
- Plant a variety of flowering plants, shrubs and trees to attract a variety of insects and birds
- Add a new dimension to your plot by building a pond. See the pond creation toolkit (Freshwater Habitats Trust) freshwaterhabitats.org.uk/projects/million-ponds/pond-creation-toolkit/
- Build a compost heap. Surrey Waste Partnership and getcomposting.com offer reduced priced environmental products including home compost bins (see www.surrey.getcomposting.com/).
- Leave cut outs under fences for wildlife when foraging e.g. hedgehog highways
- Consider supplementary feeding for birds in the winter, January can be a particularly hungry month. Wash bird feeders regularly
- Call in the experts if you find invasive species like Japanese Knotweed or Himalayan Balsam
- Sensitively choose and position external lights to minimise light encroachment – see advice online including www.bats.org.uk/publications_download.php/1330/BCT_Interim_Guidance_Artificial_Lighting_June_2014.pdf
- For more information see:
 - Hedgehog Street is a campaign aimed at ensuring the hedgehog remains a common and familiar part of British life – see www.hedgehogstreet.org/
 - Make a home for wildlife – the A to Z of a wildlife garden (RSPB) <https://www.rspb.org.uk/makeahomeforwildlife/wildlifegarden/>
 - Wildlife gardening (the Wildlife Trusts) www.surreywildlifetrust.org/wildlife/wildlife-gardening;
 - which gives basic advice on how to look after habitats such as: Grassland / Meadows, Scrub, Woodland. Ponds. Hedgerows / hedges. Verdes.



Robin (WBC)

Living Spaces continued

□ Nature in your neighbourhood – a guide to improving wildlife on your doorstep (Surrey Urban Biodiversity Project) www.surreycc.gov.uk/environment-housing-and-planning/countryside/looking-after-the-countryside/our-work-to-manage-surreys-countryside/managing-nature/nature-in-your-neighbourhood-a-guide-to-improving-wildlife-on-your-doorstep

- Predation of birds by domestic cats can be a problem, particularly where housing is next to scarce habitats such as heathland – collars fitted with bells are widely recommended;
- Please dispose of your garden waste responsibly – fly tipping of garden waste into adjacent land harms habitats and visual amenity.

Maintain hedges for bird shelter. If you're interested to plant new hedges see www.hedgeline.org.uk/index.php for ideas.



Composting (WBC)



Bee-keeping (WBC)

Access

Aim - build a publicly accessible strategic network of open spaces, green and waterways.

- Get outside and enjoy Woking's green spaces – try a lunchtime walk or cycle ride
- 'Join in, feel good' - volunteer with an organisation like The Conservation Volunteers (www.tcv.org.uk/), the Surrey Wildlife Trust (www.surreywildlifetrust.org/how-you-can-help/volunteer), the Surrey Heathland Partnership (www.surreycc.gov.uk/environment-housing-and-planning/countryside/looking-after-the-countryside/countryside-management-projects/heathland-partnership) or the Basingstoke Canal Authority (www.basingstoke-canal.org.uk/get-involved/).
- Give employees time a day or more each year to volunteer.
- Report any problems accessing Rights of Way to Surrey County Council's Access Team.

Urban Life

Aim - adapt and increase biodiversity and green space in our urban centres and surrounds, as well as villages and the countryside.

- Install living roofs/walls on outbuildings – try a green roof on your shed!
- Plant street trees
- For more ideas try: Greening Grey Britain (Royal Horticultural Society)
<https://www.rhs.org.uk/science/gardening-in-a-changing-world/greening-grey-britain>
and the RHS Perfect for Pollinators plants lists -
<https://www.rhs.org.uk/science/conservation-biodiversity/wildlife/perfect-for-pollinators>

Responsive

Aim - protect natural resources, adapt to the direct and indirect changes in climate and population, ensure appropriate estate management and support new development.

Reduce flood risk

- Create a rain garden - to increase water storage and help reduce flood risk from surface water run off to your local area
- Use landscaping techniques, such as grass swales (low areas in the lawn) or porous walkways, and gravel trenches along driveways or patios, to collect water and allow it to filter into the ground.
- Preserve existing trees, and plant trees and shrubs to promote infiltration of water into the soil.
- Install wood decking, bricks or interlocking stones instead of impervious cement walkways.
- Grade all areas away from your house at a slope of one percent or more.
- Spread mulch on bare ground to help prevent runoff.

Conserve water and other resources

- Use water butts to save rainwater – ideal for garden watering. Surrey Waste Partnership and [getcomposting.com](http://www.getcomposting.com) offer reduced priced environmental products including water butts (see www.surrey.getcomposting.com/).
- You can significantly reduce the volume of wastewater discharged to home septic systems and sewage treatment plants by conserving water. If you have a septic system, by decreasing your water usage, you can also help prevent your system from overloading and contaminating ground water and surface water.
- Use low-flow taps, shower heads, reduced-flow toilet flushing equipment, and water-saving appliances such as dishwashers and washing machines.
- Repair leaking taps, toilets and pumps.
- Use dishwashers and washing machines only when fully loaded.
- Take short showers instead of baths and avoid letting taps run unnecessarily.
- Wash your car only when necessary; use a bucket to save water. Alternatively, go to a commercial carwash that uses water efficiently and disposes of runoff properly.
- Do not over-water your lawn or garden. Over-watering can increase leaching of fertilisers to ground water.
- When your lawn or garden needs watering, use slow-watering techniques such as trickle irrigation or soaker hoses. (these reduce runoff and are 20 percent more effective than sprinklers).
- Buy chemicals only in the amount you expect to use, and apply them only as directed.

Continued

- Pick up dog waste and dispose of it properly.
- Compost is a valuable soil conditioner that gradually releases nutrients to your lawn and garden. (Using compost will also decrease the amount of fertilizer you need to apply). In addition, compost retains moisture in the soil and thus helps you conserve water.

Protect water and soil quality

- Take care to avoid chemicals that could pollute local watercourses and water supply
 - Be aware that many chemicals commonly used around the home are toxic. Select less-toxic alternatives. Use non-toxic substitutes wherever possible.
 - Take care when disposing of household hazardous waste e.g. white spirit
Take unwanted household chemicals to the Community Recycling Centre; do not pour them down the drain. Pouring chemicals down the drain could disrupt your septic system or contaminate treatment plant sludge. Never pour unwanted chemicals on the ground. Soil cannot purify most chemicals, and they could eventually contaminate runoff.
 - Use low-phosphate or phosphate-free detergents.
 - Use water-based products whenever possible.
 - Leftover household pesticide? Do not indiscriminately spray pesticides, either indoors or outdoors, where a pest problem has not been identified. Dispose of excess pesticides at the Community Recycling Centre.
 - When landscaping your garden, select plants that have low requirements for water, fertilisers and pesticides.
 - Cultivate plants that discourage pests.
 - Leave lawn clippings on your lawn so that nutrients in the clippings are recycled and less garden waste goes to landfill. Or make use of green waste collection services.
 - If you employ a professional lawn care service, select a company that employs trained technicians and follows practices designed to minimise the use of fertilisers and pesticides.
 - Test your soil before applying fertilisers. Over-fertilisation is a common problem, and the excess can leach into ground water or contaminate rivers or lakes. Also, avoid using fertilisers near surface waters. Use slow-release fertilisers on areas where the potential for water contamination is high, such as sandy soils, steep slopes, compacted soils and verges of waterbodies. Select the proper season to apply fertilisers - incorrect timing could encourage weeds or stress grasses. Do not apply pesticides or fertilisers before or during rain because of the strong likelihood of runoff.
 - Calibrate your applicator before applying pesticides or fertilisers. As equipment ages, annual adjustments might be needed.
 - Proper septic system maintenance helps protect water quality. Improperly maintained septic systems can contaminate ground water and surface water with nutrients and pathogens. By following the recommendations next, you can help ensure that your system continues to function properly:
 - Inspect your septic system annually.
 - Pump out your septic system regularly. (Pumping out every three to five years is recommended for a three-bedroom house with a 1,000-gallon tank; smaller tanks should be pumped more often).
 - Do not use septic system additives. There is no scientific evidence that biological and chemical additives aid or accelerate decomposition in septic tanks; some additives can in fact be detrimental to the septic system or contaminate ground water.
 - Do not divert storm drains or basement pumps into septic systems.
-)

☐ Avoid or reduce the use of your rubbish disposal. (Rubbish disposal contributes unnecessary solids to your septic system and can also increase the frequency your tank needs to be pumped). ☐ Don't use toilets as rubbish bins! Excess solids can clog your drains and necessitate more frequent pumping.

○ Clean up after your pets. Pet waste contains nutrients and pathogens that can contaminate surface water.

○ Drive only when necessary. Driving less reduces the amount of pollution your car generates. Cars emit airborne pollutants, which increase acid rain; they also deposit toxic metals and petroleum by-products into the environment. Regular services can help keep car waste and by-products from contaminating runoff. Clean up any spilled car fluids.

○ Recycle used oil and antifreeze by taking them to a Community Recycling Centre. Never put used oil or other chemicals down drains or in ditches.

○ Community Recycling Centres are located at Martyrs Lane, Woking and at Moorfield Road, Slyfield Green. These are managed by SITA on behalf of Surrey County Council.

○ Recycle! Visit the Recycle for Surrey website www.recycleforsurrey.org.uk/ for advice on how to compost at home, what to do with old clothes and home textiles, and what plastics can be recycled. You can also find out about the Surrey Green Network - our volunteers who help you to throw less away.



Oak tree canopy (WBC)

(source – the above advice is informed by water.epa.gov/polwaste/nps/dosdont.cfm)

Productive Places

Aim - make the most of our buildings, streets, watercourses and landscapes, taking opportunities for multifunctional use and capitalising on all funding sources.

- Grow your own organically – in your garden or in an allotment (For Allotment Society contacts see www.woking.gov.uk/leisure/greenspaces/allotments/allotmentsociety)
- Join your Local Horticultural Society – local groups include the Old Woking & District Horticultural Society
- You can also find out more through Woking Action 21's permaculture project
- Support local food producers – find out more in the Woking Local Food Directory (WoLF), www.wokinglocalfood.org.uk
- Try edible planting in and around your neighbourhood – take a leaf out of the Todmorden Incredible Edible book (www.incredible-edible-todmorden.co.uk/) and who knows what you'll achieve!



Home-growing (WBC)

Wild about Woking

Aim - promote knowledge of the value and beauty of all faces of Woking's natural environment (town and countryside) and the benefits of getting involved, as a responsible individual, a community group or a business (green economy).

- Get outdoors and get fit! Explore Surrey's countryside, see <http://www.surreycc.gov.uk/environment-housing-and-planning/countryside/explore-surreys-countryside>
- Promote environmental education. Help educate people in your community about ways in which they can help protect wildlife and habitats. Ask your local community groups to get involved. Why not take part in events like the Big Garden Birdwatch (https://ww2.rspb.org.uk/discoverandenjoynature/discoverandlearn/birdwatch/?utm_medium=website) or the Big Butterfly Count (<http://www.bigbutterflycount.org/>)
- Neighbourhood Forums could consider what they could do within their neighbourhood areas:
 - Where new streets trees can be planted
 - How they can increase green infrastructure within their local or neighbourhood centres
 - Identifying an area for a community orchard or produce garden
 - Identify areas of Local Green Space - national planning policy allows local communities to designate Local Green Space (see NPPF paragraphs 76 and 77).
- Get involved in Woking Local Action 21's annual Garden Wildlife Survey.
- Find out more from the Woking Biodiversity Partnership / Woking Local Action 21 Biodiversity group.



Goldfinch (James Sellen)

Legacy

Aim - protect and strengthen the resilience of the green infrastructure network now for future generations to enjoy

The above ideas will all strengthen the natural environment for the future. Further Specific actions supporting this aim will be identified through the Biodiversity and Green Infrastructure Plan.

- Write or call your local councillor, to inform them about your concerns to protect and improve biodiversity and green infrastructure in your local area
- Get involved in local planning decisions – comment on development proposals when planning applications are submitted (<http://www.woking.gov.uk/planning/publicaccess>) and when the Council consults on proposed long term plans policies and proposals for the Borough (email planning.policy@woking.gov.uk)
- Trade with environmentally responsible businesses

The above ideas will also be considered as possible areas for further action by the Biodiversity and Green Infrastructure Plan.



Advice for land managers

Living Spaces

Aim - restore and expand habitats for priority species enhancing the links between these (reducing fragmentation).

Agriculture

- Agri-environment schemes aim to enhance biodiversity. Farmers in these schemes receive funding in return for managing their land to benefit wildlife and the environment.
- For more ideas and information see
 - the UK Agriculture conservation database – Conservation and Farmland Biodiversity in Practice www.ukagriculture.com/conservation/farmland_conservation_biodiversity.cfm
 - the New environmental scheme for farmers to prioritise biodiversity (DEFRA, 2014) <https://www.gov.uk/government/news/new-environmental-scheme-for-farmers-to-prioritise-biodiversity>



Tractor (WBC)

- Call in the experts if you find invasive species such as Japanese knotweed or Himalayan Balsam.
- Sensitively choose and position external lights to minimise light encroachment – see advice online including www.bats.org.uk/publications_download.php/1330/BCT_Interim_Guidance_Artificial_Lighting_June_2014.pdf
- For hedgerow advice see www.hedgelinek.org.uk/index.php?page=23

Golf courses

Golf courses are unique in that they can provide a safe haven for flora and fauna in recreational areas not commonly considered to be conservation habitats.

- Sensitively choose and position external lights to minimise light encroachment and associated harmful impacts to species and habitats – see advice online including www.bats.org.uk/publications_download.php/1330/BCT_Interim_Guidance_Artificial_Lighting_June_2014.pdf

For more information see:

Operation Pollinator: Bringing the golf course to life (Positive Action for Pollinators / Syngenta, 2011) www.operationpollinator.com/golf

The Golf Environment – golf and biodiversity
www.golfenvironment.org/sustainable_golf/nature/golf_biodiversity

The Golf Environment – sustainable golf development guidelines
www.golfenvironment.org/get_involved/developments/sustainable_golf_development_guidelines

European Golf Association - Environmental Issues and Biodiversity Guidelines www.ega-golf.ch/070000/070400.asp

The British and International Golf Greenkeepers Association Limited (BIGGA)
www.bigga.org.uk/sustainability/

Woodland and Estate management

- See: Countryside Stewardship: woodland support <https://www.gov.uk/government/collections/countryside-stewardship-woodland-support>
- Ensure ecologically important greenspaces, routes and nature reserves are well managed
- Improve the condition of any existing cycle ways, public rights of way and bridleways

Brookwood Cemetery (WBC)



Access

Aim - build a publicly accessible strategic network of open spaces, green and waterways.

Agriculture

- Keep Rights of Way accessible. For more information contact the Surrey County Council's Access Team.
- Explore opportunities to support biodiversity on site

Golf courses

Golf also represents an important outdoor recreational activity, with direct benefits to physical health and general well being

- Explore opportunities to increase accessibility through the site
- Explore opportunities to support biodiversity on site

Woodland and estate management

- Follow good practice in woodland management
- Explore opportunities to increase accessibility through the woodland
- Explore opportunities to support biodiversity on site

Urban Life

Aim - adapt and increase biodiversity and green space in our urban centres and surrounds, as well as villages and the countryside.

Golf courses

○ Help to link habitat areas and provide a green lung for suburban and urban areas.

Woodland and estate management

○ Make space for biodiversity in the built up areas of your estate, as well as the undeveloped areas.

Responsive

Aim - protect natural resources, adapt to the direct and indirect changes in climate and population, ensure appropriate estate management and support new development.

Agriculture

- Keep storm gutters and drains clean of leaves and garden trimmings. (decomposing vegetative matter leaches nutrients and can clog storm systems and result in flooding).
- Winter cover crop can fertilise and reduce polluting nitrogen runoff from fields.

Golf courses

- Efficient watering practices
 - For more information see
 - The Biodiversity Benefits of Organic Farming (The Soil Association, 2000)
- www.wwf.org.uk/filelibrary/pdf/biodiversity_benefits.pdf

Woodland and estate management

- See Opportunity mapping for woodland creation to reduce diffuse water pollution and flood risk in England and Wales (Forestry Research, 2014)
- [www.forestry.gov.uk/pdf/FR_Broadmeadow_NOM_EW_2014.pdf/\\$FILE/FR_Broadmeadow_NOM_EW_2014.pdf](http://www.forestry.gov.uk/pdf/FR_Broadmeadow_NOM_EW_2014.pdf/$FILE/FR_Broadmeadow_NOM_EW_2014.pdf)

Productive Places

Aim - make the most of our buildings, streets, watercourses and landscapes, taking opportunities for multifunctional use and capitalising on all funding sources.

Agriculture

- Are you able to offer space for allotments, a community orchard or garden?

Golf courses

- Habitat creation for wildlife and visual amenity

Woodland and estate management

- Are you able to offer space for allotments, a community orchard or garden?

Wild about Woking

Aim - promote knowledge of the value and beauty of all faces of Woking's natural environment (in town and countryside) and benefits of everyone getting involved, as an individual, community group or business (green economy).

Agriculture

- Organic farming practices
- Open up certain areas to conservation volunteers for habitat creation
- What wildlife do you have? Take part in events such as the Big Farmland Bird Count (www.gwct.org.uk/farming/big-farmland-bird-count/)
- See the RSPB's advice factsheets at www.rspb.org.uk/forprofessionals/farming/advice/index.aspx

Woodland and estate management

- Support movement between green spaces by active modes of travel (such as walking or cycling)

Legacy

Aim - protect and strengthen the resilience of the green infrastructure network now for future generations to enjoy

Agriculture

- Make use of any funding available for biodiversity improvements on your land

Woodland and estate management

- Well managed woodland will endure for future generations
- Make use of any funding available for biodiversity improvements on your land
- Planting more trees of a wide range of species will help to build resilience into woodlands and boundaries, in the face of diseases that can devastate areas dominated by a single tree species.

The above ideas will all strengthen the natural environment for the future. Specific actions supporting this aim will be identified through the Biodiversity and Green Infrastructure Plan.

The above ideas will be considered as possible areas for further action by the Biodiversity and Green Infrastructure Plan.



Advice for developers

Woking Borough's planning policy and guidance

The guidance in Appendix 4 identifies a connected green infrastructure network with opportunity areas. These will be priority areas for investing in green infrastructure to meet the needs of the existing and new residents. They will help to inform policies and plans and will provide a reference for master planning for any future schemes. This section provides further guidance on how green infrastructure can be incorporated either within new development proposals or within the existing landscape.



Development (WBC)

The most relevant local planning policies are contained in the Council's Core Strategy (adopted October 2012) and the emerging Development Management Policies DPD. The emerging Site Allocations DPD also sets out detailed requirements for specific sites.

Core Strategy

[Core Strategy](#) policies that will help to strengthen the green infrastructure network and biodiversity in the Borough are listed below. The list is long, demonstrating their importance in planning terms:

- CS7 Biodiversity and Nature Conservation
- CS8 Thames Basin Heaths SPAs
- CS9 Flooding and water management
- CS16 Infrastructure Delivery
- CS17 Open Space, green infrastructure, sport and recreation
- CS 18 Transport and Accessibility
- CS 19 Social and Community Infrastructure
- CS 20 Heritage and Conservation
- CS21 Design
- CS22 Sustainable Construction- e.g. opportunities to provide green roofs
- CS23 Renewable and low carbon energy generation
- CS24 Woking's Landscape and townscape

Development Management Policies DPD

This DPD is currently being prepared. Relevant proposed draft Development Management Policies include:

Green Space Policies

- DM1 Green Infrastructure Opportunities
- DM2 Trees and Landscaping
- DM3 Outdoor Recreation and Sport
- DM4 Development in the Vicinity of the Basingstoke Canal

Policies for a Healthy Built Environment

- DM5 Environmental Pollution
- DM6 Air and Water Quality.

Site Allocations DPD

This DPD is currently being prepared and identifies specific biodiversity, green space and links required for individual development sites.

Woking Borough Council's Planning Service offers a pre-application advice service. For full details see www.woking.gov.uk/planning/service/preapp

Planning status of this document

This Biodiversity and Green Infrastructure Strategy for Woking Borough has been prepared as an action of the Woking 2050 strategy (the Council's Climate Change Strategy). It also amplifies Policy CS7 *Biodiversity and Nature Conservation* of the Woking 2027 Core Strategy.

The strategy was the subject of consultation with key stakeholders, including the Climate Change Working Group and a focused consultation with relevant interested parties December 2015 - January 2016.

This living strategy will continue to grow and evolve. The Council will keep the document up to date, reflecting the latest available research and progress in delivering biodiversity benefits for the Borough. You can always find the latest version on our website at <http://www.woking.gov.uk/environment/greeninf/naturalwoking>

Its planning status is as informal planning guidance, adopted by the Council 's Executive, 17 March 2016.

Designing for biodiversity and green infrastructure

Green Infrastructure principles should be embedded in the design rationale at the beginning. The main stages to consider are as follows:

1. Survey
2. Design
3. Delivery

1. Survey

The initial stage will be to get an understanding of the context of your site, including the policy and physical context. You should:

- Survey the site and obtain baseline data, for example: access, views, existing use, surrounding uses, surrounding character, etc.
- Check for statutory designations and associated policy within the Core Strategy Proposals Map (and the emerging Development Management Policies and Site Allocations DPDs as relevant)
- Check for any other designations that may be relevant that are not contained within the Proposals Map, for example:
 - Flood Zone maps are retained by the Environment Agency (see the [Flood Map](#) and the latest SFRA)
 - Information regarding important habitats and species retained by [Surrey Biodiversity Information Centre](#).

Review the green infrastructure requirements set out in the:

- Core Strategy
- this Biodiversity and Green Infrastructure Strategy

You can also consult with the Council on large schemes through the Council's [pre-application planning advice service](#). The Council's Neighbourhood Services section may be able to advise on local need for green infrastructure.

Standards for most forms of open space are set out in Appendix 4 of the Core Strategy. The standards are used to assist in determining future need in the Borough. The distribution of this need will be informed by various Council Strategies and Plans including this Strategy, the Open Space and Outdoor Sports and Recreation Audit, and any information updating the earlier Green Space Development Plan and Playing Pitch Strategy. Provision will also depend on the availability of land.

Based on the initial information gathered, you should consider whether any surveys or specialist advice will need to be sought, examples may be:

- Soil scientist advice/ survey - to determine the grading and quality of soil on the site and to consider what can be recycled/ reused;
- Ecologists' advice - where the site contains or is in the vicinity areas of potential ecology value;
- Consultation with Natural England or the Surrey Wildlife Trust.

Some surveys need to be carried out at certain times of the year. The table next gives an indication of general periods when surveys could be carried out, although expert advice should be sought on the matter.

The Council wishes to support the UK's achievement of 'favourable conservation status' (FCS) for its protected habitats and species, by achieving the same status for protected species and habitats within Woking Borough. This will involve a series of initiatives supporting individual protected species, and at the same time development in the area.

Check Appendix 9 onwards of this document for any initiatives that may affect your site and their survey requirements.

Survey	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
Scoping Walkover	●	●	●	●	●	●	●	●	●	●	●	●
Phase 1 Habitat Survey*				●	●	●	●	●	●			
Botanical			●	●	●	●	●	●	●			
Large Fungi									●	●	●	●
Mosses and Lichens	●	●	●	●					●	●	●	●
Nesting birds			●	●	●	●	●	●				
Wintering birds	●	●									●	●
Terrestrial Invertebrates			●	●	●	●	●	●	●			
Butterflies and moths					●	●	●					
Dragonflies					●	●	●	●				
Aquatic invertebrates			●	●	●	●			●	●	●	
Reptiles			●	●	●	●			●	●		
Amphibians			●	●	●	●			●	●		
Badgers		●	●	●								
Bats	●	●	●	●	●	●	●	●	●	●	●	●

Table showing various surveys and when they should be undertaken (A developer's guide to biodiversity, Surrey County Council)

More information about ecological survey seasons is available at

www.gov.uk/guidance/protected-species-and-sites-how-to-review-planning-proposals

You should consider whether appraisals or assessments need to be carried out, for example:

- Ecological Appraisal that will help to inform the design of a site
- Appropriate Assessment may be required for development that effects SPA/SAC
- Any application likely to have an impact on a SSSI will require provision of an Environmental Impact Assessment
- A LVIA should be carried out if
- proposals are likely to have any potential impact on the surrounding landscape/townscape character. The submission of a LVIA will be particularly important within an Escarpment Area, Conservation Area or
- anywhere of designated special landscape/townscape character
- Site Waste Management Plan (SWMP) – The Council requires sustainable waste practices as a condition on planning applications, this means the submission of a SWMP to be submitted before construction begins. The SWMP should include information on how soil is managed on the site as well as other management of construction waste/materials produced from the development. Careful management of soil on a development site, removal, storage etc. allows it to be re-used within the scheme, saving costs to import/export resources. Further information on soil treatment and recycling on a site can be obtained from [here](#).

Applicants should develop a clear vision and rationale for green infrastructure including biodiversity enhancements and connections from these. Early consideration of these matters will ensure that green infrastructure is adequately planned for and incorporated within an overall masterplan.

2 Design

When the baseline information has been collated, you may find that you have a number of issues to address and provision to be accommodated on the site. Depending on the size of the site or the significance of the impact of the scheme on the natural environment, a masterplan could be helpful. For smaller schemes a landscape/green infrastructure plan showing the existing and proposed may be more appropriate.

Design is an iterative process and where relevant (proportional to size of scheme or impact) you should adopt a multidisciplinary approach, working with other specialists who will be able to provide expertise in their various areas. You may wish to consult or employ the expertise of: public bodies such as Woking Borough Council, Surrey County Council, Environment Agency, Surrey Wildlife Trust, Natural England, and specialists such as ecologists, landscape architects, and soil scientists.

Public consultation is also recommended and will be fundamental for larger schemes. (see the Council [Statement of Community Involvement](#) (SCI)).

Master planning requires the consideration of all matters, green infrastructure will be one element of this process - however all elements should be considered as a whole and designed comprehensively. The Design SPD and Climate Change SPD provide further guidance/principles on the design of other elements (e.g. the built environment).

The design develops iteratively through testing of various designs, leading to a final masterplan that meets the design objectives.

The Design Process:

- 1 Site Analysis: retain, restore and enhance existing green infrastructure assets
2. Creation and connection of green infrastructure assets
3. Consultation and interdisciplinary working
4. Refining design options
5. Finalise design

More detail about each of these stages follows at the end of this section.

3 Delivery

Funding

Larger developments will provide green infrastructure as a part of the scheme and maintain this in the long-term, secured by planning condition.

A proportion of funding for green infrastructure provision will come from the CIL. This will contribute towards specific forms of strategic green infrastructure identified and costed in the CIL Regulation 123 list. Currently these include the following forms of open space: outdoor sports, allotments, child play space and teenage play space.

The CIL tariff also includes SPA mitigation through the provision of SANG. The CIL tariff allows for payment in kind, for example land payment, determined on a case by case basis.

Phasing/programme of works

Implementation of green infrastructure should be considered at the beginning. The careful phasing of on-site works will:

- Minimise any potential impact or disturbances to wildlife activities, by carefully considered timetable of the works to avoid seasonal wildlife activities or by zoning areas for specific works incorporating protection measures (e.g. tree guards on retained trees).
- Reduce the risk of any slippages in programmes and ensure efficient management of resources on the site.

The Design Process

1 Site Analysis: retain, restore and enhance existing green infrastructure assets

Green infrastructure assets comprise both designated and non designated assets. Statutory designations and policies in the Core Strategy and Development Management DPD require the preservation and conservation of certain green infrastructure elements. In general, the retention of any green infrastructure assets should be the starting point to connecting a site with the wider green infrastructure network. The introduction of mitigation measures or re-provision should be considered if removal is unavoidable.

First review the context of the site, identifying the natural features, views, topography of the land and the hydrology and drainage of the local geology. Understanding of the physical make up of the site will likely steer you towards a design approach that works with the natural landscape.

Methods to conserve and enhance an area include:

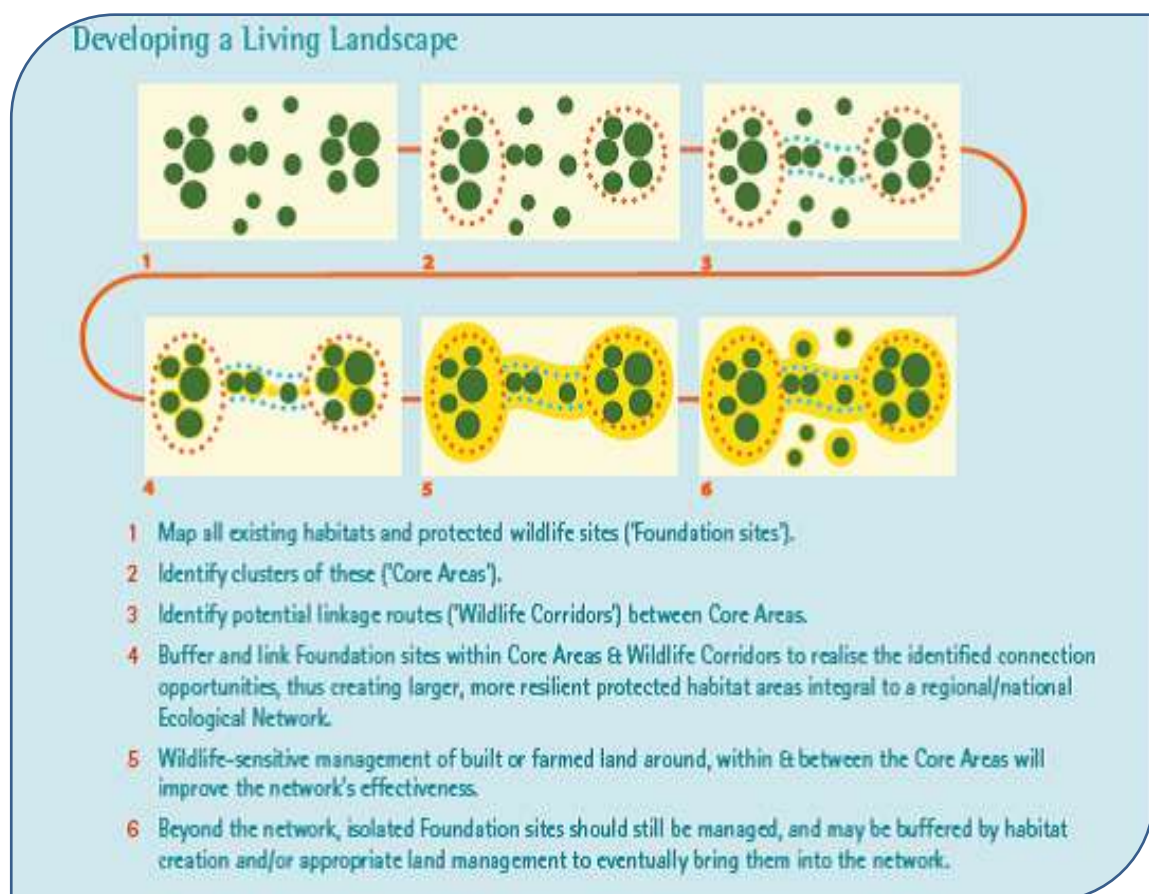
- Retain the most sensitive and significant areas of green infrastructure that may be of ecological, recreational or aesthetic value
- Identify and tidy up any 'messy' edges for example degraded old ponds, gaps within old hedges, gaps in woodland canopy

- Reduce any potential disturbance by the creation of a potential landscape buffer or screening - which may comprise of areas of open green space, hedging, tree belts or landscape bunds.

Designated sites of environmental, nature and ecological value are afforded international/national statutory protection. Core Strategy Policy CS7, CS8, CS9, CS24 set out local policies for these during the planning process.

The NPPF seeks to protect best and most versatile land, which is defined to be agricultural land grades 1 to 3b. If development is demonstrated to be necessary, then poorer quality land should be preferred.

Where land/soil of a reasonable quality will be lost to development, then the Council will require a survey of top soil to be removed and recycled. The Council will also require a SWMP.



Method of Conserve, Create, Connect and Celebrate (Surrey Wildlife Trust)

2. Creation and connection of green infrastructure assets

The re-provision of any lost green infrastructure asset will be required where appropriate. This may be like for like replacement. However, where cases affect an area of habitat or species importance, then this may require a more sophisticated approach to re-provision i.e. Biodiversity offsetting. More information on Biodiversity offsetting is provided by the Biodiversity Planning Tool which includes a biodiversity off-setting calculator.

The connection of a site with the wider green infrastructure network should be a fundamental consideration in the design /master planning stage, and not an add-on at the end.

The successful integration of new green infrastructure assets with the wider network will require consideration of the context of a site. Proposals should seek to improve biodiversity connectivity and accessibility to nearby green spaces.

Connections should be made to the wider green infrastructure network through the creation of green corridors and interlinking a series of green spaces or elements. This Strategy will assist as it identifies a green infrastructure network and potential opportunity areas. If development proposals fall within and near these areas then green infrastructure should be designed to make a contribution or enhance these connections.



Examples of how green corridors could be designed for, incorporating paths and cycle ways, stepped vegetation/canopy and rest areas (liz freemont landscape architecture)

- Designs should consider the physical context of the site, for example its topography of the site. The soil makeup may lend itself to the incorporation of a particular type of sustainable drainage systems on a particular part of the site.
- There is a wealth of guidance available on the design of Sustainable Drainage systems⁹. Designs should respond to the surrounding context, landscape and townscape character. Where the site is within a sensitive landscape area then applicants should consider whether a Landscape and Visual Impact Assessment (LVIA) should be carried out. This should show the existing and proposed views of the site and what measures have been incorporated to reduce any potential effects.
- Guidance on how to prepare a LVIA has been prepared by the Landscape Institute, see landscapeinstitute.co.uk/knowledge/GLVIA.php
- The Surrey Landscape Character assessment can also be used for detailed analysis work at a more local scale to develop a local character assessment. This can be used to define how individual landscape elements fit together to create distinctive neighbourhoods/whole landscapes or how GI assets integrate development in to the wider countryside. The assessment is produced by Surrey County Council and is available at <http://www.surreycc.gov.uk/environment-housing-and-planning/countryside/countryside-strategies-action-plans-and-guidance/landscape-character-assessment>.
- Green infrastructure can comprise of a variety of elements (as listed page 4). The green infrastructure assets used will depend on the scale and context of the site. Sites may be required to incorporate a range of green infrastructure elements, where these should be strategically planned for to avoid any potential conflicts. For example, designs should consider how to balance any potential conflicts between areas of habitat/wildlife importance or enhancement and green infrastructure which are accessible by the public without causing undue harm and disturbance to areas of habitat and species importance.
- Sites should incorporate a range of multifunctional green infrastructure elements. By maximising the range of green infrastructure elements, this will maximise the range of benefits – including environmental, social and economical benefits. The right combination of the various types of green infrastructure elements will depend on the context of the site.
- GI is made up of different landscape elements. It is important that it is viewed as a whole landscape which exceeds the sum of the individual parts.

⁹ For example, guidance prepared by Cambridge City Council [*Sustainable Drainage Design Guide*](#).

3. Consultation and interdisciplinary working

Various design options should be worked up and consulted on. Discussions with key stakeholders and specialists will enable the best approach and design to evolve. A multidisciplinary input will ensure that other aspects of design and planning are to be considered and addressed concurrently. For large scale projects, it may be worthwhile to form a working group of individuals of different specialist areas to progress a design for an individual site.

4. Refining design options

This stage is about taking a concept masterplan down to a detailed masterplan. Reviewing the various options, beginning to consider the logistics of delivery and other detail matters including plant/tree species and materials. This stage is about 'place making'; ensuring the design is functional, would be easy and pleasant to move around, and has a distinctive character. Matters to consider here may include.

- What 'soft' measures (such as the inclusion of window boxes, bird boxes, woodpiles and safely standing 'dead wood') could be introduced to enhance the design. These are cost effective ways to introduce and contribute to the overall green infrastructure network. Retrofitting green roofs and walls should also considered.



Hoe Valley Scheme, Woking (WBC)

- Materials and street furniture should reflect the context and to create a distinctive environment, for example in rural settings traditional boundary treatment would be more appropriate over the more domestic looking ones.



Traditional rural boundary treatments



Sensitive signage treatment



Street furniture compatible with its setting

For more ideas for integrating biodiversity and green infrastructure enhancements, see the checklist suggestions later in this section.

5. Finalise design

The last stage is the final detailed masterplan, comprising of technical details that will enable proposals to be delivered. This may include technical specifications such as e.g. planting specification.

Plans should clearly show the various components of the existing green infrastructure and how they will be retained or reorganised comprehensively to maximise the benefits of green infrastructure on a site. This can be done effectively by the use of various symbols or different colours to represent existing or proposed provision.

Promoting biodiversity and other green infrastructure in your schemes

Living Spaces

Aim - restore and expand habitats for priority species enhancing the links between these (reducing fragmentation).

○ Create multi-functional habitat on buildings (roofs, terraces, facades etc.). Where feasible, residents/users should be able to access these assets.

○ Maximise the use of built structure for biodiversity (green walls, green roofs, bat/bird/invertebrate provision). Include bat boxes, bricks or lofts and bird boxes on all housing, to reflect the species within the area. Safely retained standing dead wood provides a valuable habitat (see <http://treesforlife.org.uk/forest/dead-wood/>). Small and often low-cost design changes can make buildings suitable for bats, birds and invertebrates. Nest boxes can be mounted on the outside of buildings or trees, special bat or swift bricks can be incorporated into the structure, and entire roof spaces can be designed to provide opportunities for bats to roost. There are various issues to consider to provide optimum habitats for bats, including: access, size of roost space and structure; materials for the roosts; light conditions; planting and landscape features. The Bat Conservation Trust has produced a useful guide called 'Bats and Buildings'. The following tool may be useful for developers to determine the amount of roosts to include in designs. In order to determine whether the species are relevant to the site, a desktop survey should be conducted via Surrey Biodiversity Information Centre (see www.surreywildlifetrust.org/sbic for contact details).

Great Spotted Woodpecker
(James Sellen)



○ Trees make a vital contribution to the unique character of Woking, its landscapes and townscapes, and to connecting habitats. Address existing trees and new planting in your design process, following the guidance in BS5837 'Trees in relation to design, demolition and construction recommendations'. This will help to ensure sufficient space for good sized trees above and below ground, and reduce issues and maintenance costs later on. The Council is preparing a Tree Strategy and detailed Tree Management Policies to provide additional advice on trees in Woking Borough.

○ There are similar issues to consider when siting nest boxes for birds, depending on the species the box is intended for. The RSPB website gives detailed information on factors such as: the orientation and positioning of the box; the height at which they should be fixed dependant on species; internal versus external placement; and best location for placement on the building. See www.rspb.org.uk/advice/helpingbirds/nestboxes/index.aspx for more information.

○ Incorporate insect-attracting plants, hedgerows, log piles, loggaries and other places of shelter for wildlife refuge/hibernation within structural landscaping and open spaces.

○ Avoid impermeable surfaces where possible. SuDS can be focal to every scheme and enhanced for biodiversity by incorporating ditch habitat and pond networks.

○ Provide private garden space wherever possible. Consider including provision of hedgerow habitat on at least one side of the garden. Garden walls can be designed to incorporate shelter for overwintering insects.

○ Build hedgehog – friendly as well as people – friendly environments. See Hedgehog street www.hedgehogstreet.org

○ Seek to increase an area's biodiversity assets and (in rural areas) countryside character, while guarding against the loss of irreplaceable habitats. This involves safeguarding and enhancing biodiversity already present and/or providing new areas of habitat and features for wildlife appropriate to the landscape and the ecology of that neighbourhood.

○ The move to design more energy efficient and airtight buildings leaves less space for species to inhabit. Those involved in low and zero carbon buildings are encouraged to refer to 'Biodiversity for Low and Zero Carbon Buildings' to learn how to incorporate provision for biodiversity within developments (see Sources of Further Information).

○ Include wildlife-friendly boundary protection (hedges rather than fences).

○ Ensure lighting design is appropriate – the impact of lighting on wildlife, especially bats, as well as designing areas of no or low level lighting.

○ Sensitively choose and position external lights to avoid light pollution and light encroachment into habitats – see advice online including

www.bats.org.uk/publications_download.php/1330/BCT_Interim_Guidance_Artificial_Lighting_June_2014.pdf

○ Install small mammal/reptile/amphibian hibernacula

○ Reuse materials won from site for creating habitat.

Maintain and enhance habitat corridors.

○ Improvements to the network of green infrastructure in an area are often synonymous with bringing benefits for biodiversity – one provides a platform for the other.

○ Is your development site definitely or likely to be home to a protected wildlife species?

If so, you may have more than one option when considering how best to respond to the presence of this species and your development proposal. The Council is seeking 'favourable conservation status' for all protected habitats and species in the Borough. This will involve a series of initiatives supporting individual protected species, and at the same time development in the area. **Check Appendix 9 onwards of this document for any initiatives that may affect your site and their survey requirements.**

○ For more information see:

A developer's guide to biodiversity: how to incorporate biodiversity into your development (Surrey County Council)

www.surreycc.gov.uk/data/assets/pdf_file/0018/34605/Developers-Guide-to-Biodiversity_small.pdf

[A Living Landscape for Surrey](#) (Surrey Wildlife Trust)

[Biodiversity and Planning in Surrey](#) (Surrey Nature Partnership, May 2014)

surreynaturepartnership.org.uk/our-work/

Biodiversity Planning Toolkit

www.biodiversityplanningtoolkit.com/stylesheet.asp?file=30062011222444

Access

Aim - build a publicly accessible strategic network of open spaces, green and waterways.

- Explain in design and access statements how green spaces are to be provided and used.
- Aim for no net loss of green infrastructure, with a general aim that a minimum of 40% of the total land constitute green infrastructure (including private gardens and living roofs, as well as any individual site).
- If any sports facilities and pitches are included in development proposals, bear in mind that the boundaries of sports pitches can be designed and managed for biodiversity.
- Create larger-scale natural habitat within informal open spaces, country parks and play areas. For example, consider setting play equipment and kick-about areas within wildflower habitat or rough grassland.
- Aim to create a network of green and blue corridors and natural habitat throughout the development which connects larger or more expansive open spaces for both people and wildlife. Where possible, habitat creation and enhancement should be designed around existing assets. For example, providing SuDS in a natural channel can also improve biodiversity and enhance green spaces for leisure use.
- Protect, enhance and buffer waterways both in-channel and along the banks.
- Enhance walking and cycling routes, as well as areas along railway lines, roads and streets, through the provision of habitat verges, hedgerow, wildflower-rich or rough grassland banks.
- Bear in mind that other green space where nature conservation may not be the primary objective (e.g. private gardens, parks, public rights of way and cycle routes) can, in managed sensitively for wildlife, help to sustain and increase particular species and contribute to achieving net gains for biodiversity by serving as stepping stones and corridors.
- Adhere to open space standards in the Core Strategy, and Accessible Natural Greenspace Standards (by Natural England).
- Extend the existing green infrastructure network. Aim for a net gain in green infrastructure and biodiversity – around 40% of the total land.
- Connect developed green spaces to surrounding existing green areas.

New spaces or facilities

- Maps 20 – 23 (in Appendix 3) show the distribution of existing open space in the Borough. They also show the catchment areas based on the open space standards for new development, set out in Appendix 4 of the Core Strategy. Open space standards are generally based on distances from facilities and population size. This is a logical approach as it emphasises the need for facilities to be accessible for local residents.
- Map 19 (in Appendix 3) shows the general distribution of new housing up to 2027. This gives a general idea of where new open space facilities should be located in the Borough. By 2027 there will be an increase of 4964 dwellings (on average 292 additional dwellings per year).

Based on the Core Strategy open space standards, the additional open space needed to support this development is approximately:

- 9-10 new play spaces
- over 12 hectares of playing pitches
- 119 plots (an average of 82 plots per allotment in Woking Borough) and
- 96 hectares of SANG land.

○ A simple, high-level analysis of the current and required distributions of different types of open space has identified the opportunities shown in Table 1.

Looking at the general distribution of allotments (Map 20) indicates opportunities to the Horsell East and Woodham, St Johns and Hook Heath, Mount Hermon West, Kingfield and Westfield, Mayford and Sutton Green and Pyrford.

If we look at the general distribution of parks and outdoor sports (Map 21), we see an even distribution within the urban area. The only gaps appear to be found in Mount Hermon East and east of Pyrford.

The distribution of play areas (Map 22) indicates opportunities in St Johns and Hook Heath, Mount Hermon East, Pyrford, West Byfleet and Byfleet.

Meanwhile the existing pattern of existing SANG sites and their catchments (Map 23) suggests opportunities to the east of the Borough.

Current and required distributions of different types of open space

Open space	Opportunities by area¹
Allotments	Horsell East and Woodham, St Johns and Hook Heath, Mount Hermon West, Kingfield and Westfield, Mayford and Sutton Green and Pyrford.
Parks and Outdoor Sports	Mount Hermon East and east of Pyrford.
Play Areas	St Johns and Hook Heath, Mount Hermon East, Pyrford, West Byfleet and Byfleet
SANGs	East of the Borough.

○ A number of other factors will also need to be taken into account when planning new open space provision. For example land availability, population density of the local area, need and demand. We would therefore encourage you to contact the Council for detailed advice when proposing new open space or recreation facilities.

Green infrastructure network opportunities

- Maps 24 and 25 (provided at the end of this appendix) show there is potential to link together green infrastructure assets within the Borough to create a strong green infrastructure network.
- The rationale behind the network is to link the urban core (in particular Woking Town Centre) with the natural open spaces within the wider Borough by identifying connected routes to the wider countryside.
- These opportunities were identified by looking firstly at the most sustainable locations (the town, districts and local centres) and optimising existing cycle routes/rights of ways that radiate out to green spaces on the fringes of these locations. The second stage was to fill in the gaps, aiming to identify connections via green corridors, segregated away from highway traffic. This approach also aimed to maximise the potential for circuits to be made within the network and connections across the Borough boundary to neighbouring areas.
- Some areas have also been identified where particular emphasis could be made to reinforcing the green infrastructure network. These areas offer perhaps the best opportunity to provide for green infrastructure and improve the connections to existing open spaces to reinforce the wider green infrastructure network across the Borough.
- The potential network shown in Maps 24 and 25 demonstrates that a strong, connected network can be achieved. Whilst there is no absolute science behind this approach, so the routes illustrated are not definitive, they do represent a good starting point.
- Proposals for new green infrastructure and connections can helpfully be informed by a masterplan demonstrating how the proposal will connect with and reinforce the existing green infrastructure network.

Management/Maintenance

- The delivery of a green infrastructure does not necessarily signify the end. Applicants/ Developers should be mindful of the long term maintenance and management of open space green infrastructure. Where new open space provision is on private land then the landowners should be mindful of the maintenance and management of these areas in the form of a Maintenance and Management Plan. If the site is to be in public ownership then the Council will manage and maintain these areas through CIL or other available sources of funding. Usually subject to maintenance charge through s106
- For more information, see
 - Open Space, Sports and Recreation Facilities Audit (Woking Borough Council, 2008) www.woking.gov.uk/planning/policy/ldfresearch/ppg17
 - [Thames Basin Heaths Special Protection Area Avoidance Strategy 2010-2015](#) sets out the approach to mitigate against impact caused by new residential proposals on the SPA.



Wildflowers (WBC)

Urban Life

Aim - adapt and increase biodiversity and green space in our urban centres and surrounds, as well as villages and the countryside.

- Allowance can be made for installation of large trees in urban regeneration schemes, and where any street trees that are lost could be replaced by at least two trees which will reach the same stature and provide similar ecosystem services in the long-term.
- Mature trees and green spaces have far greater benefit in lowering the UHI effect than newly planted trees, and so these should be preserved in new developments where possible.
- Include natural green spaces and wild or free play areas in the urban setting.
- Providing outdoor spaces for more urban developments – such as those foreseen in Woking Town Centre - can be challenging, but plazas, allotment areas, courtyards, green/brown roofs and communal green space can provide alternatives.
- Create green spaces on flat roofs by developing green/brown roofs - A step further is to provide a 'living roof', which can provide foraging opportunities for birds, and support a range of native plants – these measures will require early consideration of building form and structure so that habitat requirements can be accommodated from the outset. The ecosystem services that are provided by green roofs and living roofs will be especially important in reducing the UHI effect, and help reduce the impact of flash summer storms that are predicted to increase as the climate changes.
- The Council encourages all major developments to incorporate living roofs and walls where feasible. Living roofs can take many different forms and are equally encouraged in smaller developments and extensions where the opportunity arises, and where they would compliment local character. Extensive green roofs (single/multi family residential buildings), for example, are cheaper to install than intensive green roofs (commercial buildings) and are less costly to maintain.
- There is a perceived issue of competition at roof space for various green approaches – a conflict between solar power and green roofs. In fact there are many advantages of combining green roof technology and solar energy technology. The combination of the two is actually a good example of an ecosystem services approach to the built environment. Whilst the green roof provides a range of benefits to the environment - reduction in the Urban Heat Island Effect, thermal cooling and insulation, reduction in airborne particles, reduction in flash floods and storm water management and increase in biodiversity, the positioning of Photovoltaic panels on roofs provide a renewable energy source for the building. The Council welcomes this approach in development proposals.
- Try to utilise bespoke solutions based on the needs of the wildlife specific to the site and adjacent area. A wealth of information on green roofs is available on the www.livingroofs.org website.
- Those incorporating green roofs into their developments are also referred to useful guidance produced by the Environment Agency and Natural England (for living roofs on a domestic or garden building). See Sources of Further Information for details.
- Existing tools such as the Code for Sustainable Homes and BREEAM standards have ecology and biodiversity components that incentivise the consideration of biodiversity in new construction. Although developers are encouraged to meet these standards – such as the ecology elements of the Code – the Council welcomes developers taking a step beyond these tools to make a genuine contribution to local ecological value and achieve a net gain in biodiversity.

Responsive

Aim - protect natural resources, adapt to the direct and indirect changes in climate and population, ensure appropriate estate management and support new development.

- Plan in waste and recycling requirements as you design your scheme, follow this link for advice
www.woking.gov.uk/environment/wasterecycle/householdwaste/goodpracticeguide
- Ensure that where possible streets and roads are tree-lined or contain hedgerows appropriate to local character, habitats and species. Even modest increases in tree cover contribute to lowering the Urban Heat Island effect.
- Harvest, store and re-use rainwater in low-carbon systems and incorporate such systems into all strategies for green infrastructure to ensure that ecosystem services (such as urban cooling) can be achieved.
- Choose plants that will be resilient to changing temperatures and native to the area – for example, those that do not require a large amount of water with anticipated increase in drought conditions.
- Look for no regrets, low regrets, win-win and adaptable measures to manage climate risks.
- ‘Climate-proof’ your development by including climate change adaptation measures at the design phase.
- Design for the conservation of water and to encourage occupants to use water responsibly.
- Incorporate appropriate SuDS in your development.
- Think about how responsible environmental practices e.g. habitat creation through hibernacula, ponds, corridors/pathways etc could be incorporated during and post site development.
- The Construction Code of Practice for the Sustainable Use of Soils on Construction Sites is a practical guide to the sustainable use of soil on construction sites. The full guidance can be obtained [here](#). The guide sets out the legislative background to soil protection:
 - The Agricultural Land (removal of Surface Soil) Act 1953.- restricts the removal of surface soil from agricultural land without planning permission
 - Town and Country Planning Act 1990- this promotes the reclamation and reuse of derelict and contaminated land, including the reuse and management of soil on development sites.
- Guidance can also be obtained from Surrey County Council, the Minerals Planning Authority, www.surreycc.gov.uk/environment-housing-and-planning/minerals-and-waste-policies-and-plans.



Male Common Lizard (James Sellen)

- Soil survey should be undertaken by a soil scientist/practitioner to check if the soil on the site is inert or if it can be recycled.
 - A SWMP should identify what waste may be produced from the scheme and what actions will be taken to recycle any potential waste. SWMPs should include a sub-section Soil Resource Plan (SRP) to explain the type of soil on site, if the soil is to remain in-situ, where it will be reinstated or if it is to be taken off site, how the soil will be stripped, stored, tracked and moved.
 - Ensure good on-site management of soil e.g. where soil is newly laid, avoid works that would compact and damage it- only allow for landscape works in that area. Soil itself is a resource. Once soil is disturbed biological changes can occur. Stockpiling topsoil, which requires aerobic conditions, leads to anaerobic conditions for the vast quantity of the stockpile (all the soil except the capping). The biomass breaks down and the soil dies. Think about adopting sensitive site management regimes that consider soil as a resource, as well as encourage wildlife.
 - It is in your interest to ensure soil is managed properly during the construction process. The guide provides examples of schemes where soil has been mismanaged which has led to the loss of useable soil. This often leads to extra costs being incurred having to import more soil onto sites, leading to delays to projects. An example within Woking where soil has been successfully removed, remediated and replaced to form new parkland is as part of the Hoe Valley Scheme.
 - For more information see:
 - Ancient woodland and veteran trees: protecting them from development (Natural England, Forestry Commission) <https://www.gov.uk/guidance/ancient-woodland-and-veteran-trees-protection-surveys-licences>
 - Climate Change SPD (Woking Borough Council, 2013) contains a section on adapting to Climate Change (section 7) and advice on green infrastructure, biodiversity, design considerations, sustainable drainage.
 - Design SPD (Woking Borough Council, 2015) contains a section on landscape
 - NPPF
- https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/6077/2116950.pdf
- Planning Practice Guidance planningguidance.planningportal.gov.uk/
 - Water. People. Places. (Lead Local Planning Authorities in the South East)

Productive Places

Aim - make the most of our buildings, streets, watercourses and landscapes, taking opportunities for multifunctional use and capitalising on all funding sources.

- Where the scale of development permits it, provide wildlife friendly allotments, community meadows, orchards and woodlands, a series of community gardens offering social and amenity space, and attractive, cool and shaded outdoor areas readily accessible from people's homes.
- Maximise the multi-functionality of green infrastructure assets in managing water, enhancing biodiversity, dealing with waste, encouraging sustainable travel, producing food, building resilience to climate change, and enhancing health and wellbeing of occupants.

Wild about Woking

Aim - promote knowledge of the value and beauty of all faces of Woking's natural environment (in town and countryside) and benefits of everyone getting involved, as an individual, community group or business (green economy).

- The design of development should aim to reflect and enhance the area's locally distinctive character. To achieve this, existing biodiversity features of environmental, historical or cultural interest, such as habitats of principle importance, ancient woodland and hedgerows, open spaces, and routes long used by local communities, should all be conserved and integrated into the design.
-

Legacy

Aim - protect and strengthen the resilience of the green infrastructure network now for future generations to enjoy

- Set out how green infrastructure assets will be managed and maintained in the long-term.

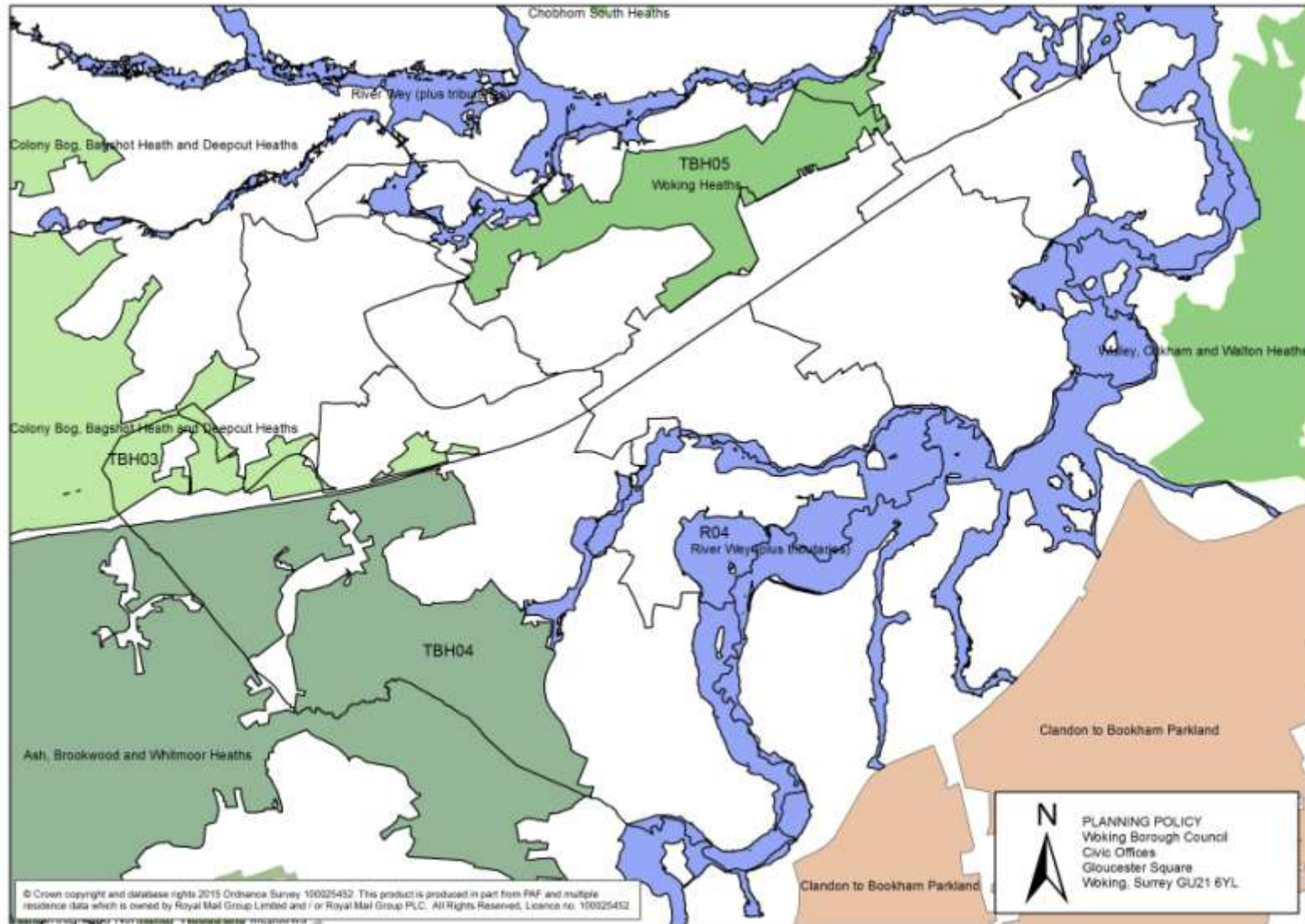
The above ideas will all strengthen the natural environment for the future. Specific actions supporting this aim will be identified through the Biodiversity and Green Infrastructure Plan.

The above ideas will be considered as possible areas for further action by the Biodiversity and Green Infrastructure Action Plan.

Map 24 Green infrastructure opportunity areas within the Borough



Map 25 Biodiversity opportunity areas within Woking Borough



Appendix 9 - Favourable Conservation Status

One of the main aims of the Council in preparing this Strategy is to support the UK's achievement of 'favourable conservation status' (FCS) for its protected habitats and species.

The phrase comes from the 1992 European Community Directive on the Conservation of Natural Habitats and of Wild Fauna and Flora (the Habitats Directive, 92/43/EEC). This requires that measures taken by member countries pursuant to the Directive 'be designed to maintain or restore, at favourable conservation status, natural habitats and species, of wild flora and fauna, of Community interest' (emphasis added).

Four parameters are considered when assessing the conservation status of habitats: their range, area, structure and function (collectively known as habitat condition). For species, the parameters are: range, population, habitat (extent and condition) and future prospects. Each of these is assessed as being one of the following conditions: Favourable, Unfavourable-inadequate, Unfavourable-bad, or Unknown.

Individual assessments are also made of the conservation status of each of the habitats and species. More information about conservation status assessment - including UK assessment progress reports on implementing the Habitats Directive for particular habitats and species - are available at jncc.defra.gov.uk/page-4096

Woking Borough Council has a range of project ambitions to support habitat protection, restoration and creation, accessibility and connectivity, for sustainable populations of individual protected (priority) species. Those already underway are set out in Appendix 5.

As new projects come forward, these will contribute towards making these ambitions a reality. Potentially these could assist habitat restoration and creation for species including bats, water voles and otters, whilst at the same time benefitting residents' health and well-being through improved access to natural spaces (although it may be necessary to exclude people from certain habitats at particular times of year). The projects can also help facilitate the development essential for the Borough's future prosperity in a way that is in harmony with our environment.

The first project is a joint Natural England and Woking Borough Council pilot to assist Great crested newt populations in the Borough. Full information about this is provided in Appendix 10 of this supporting document. Additional appendices will be added over time to explain how each habitat / species initiative works and how you can get involved.

Appendix 10 - Great Crested Newt

Executive Summary

This Appendix describes a new approach designed in partnership by Natural England and Woking Borough Council to enhance Great Crested Newts (GCN) and their habitats, while supporting timely development in Woking Borough. GCN are a European protected species and it is illegal to capture, kill, injure or disturb them without a licence. The aim of this pilot is to take a more proactive, landscape wide approach to protecting this species and its habitat, focusing conservation where it will bring the greatest benefits to the GCN's overall local populations. The pilot offers a range of benefits both in favour of conservation and development.

Conservation benefits

- A more proactive, landscape wide approach to GCN protection.
- The risk of GCN habitat lost to development is minimised.
- The pilot will create new/improved habitat to provide strongholds for the local GCN newt population.
- There is the opportunity to improve the connectivity between otherwise fragmented GCN populations.
- Monitoring of populations and their habitats.
- Maintenance of habitats for the benefit of GCN habitats.

Development benefits

- The pilot will ease the constraint on layout and design of development land.
- The risk of delays and associated cost implications are minimised through a streamlined GCN licencing process.
- No further surveys or mitigation required once initial desktop survey undertaken.
- No need to apply separately for a licence from Natural England.

Introduction

The GCN is one of our most striking amphibians but has suffered from loss of habitat. England supports a number of significant breeding populations but our knowledge of their size and distribution is limited. As a European Protected Species (EPS), it is illegal to capture, kill, injure or disturb them without a licence from Natural England.



Great Crested Newt ©
Natural England/Peter Wakely

The Woking Core Strategy provides a clear long term plan for future development in this Surrey Borough. The Council is currently preparing Development Management Policies and Site Allocations documents to support delivery of the homes and other development and infrastructure planned.

This pilot seeks to minimise the risk of GCN habitat loss to development, and at the same time help the delivery of development by easing constraints on the layout and design of development land. To ensure any unavoidable losses are offset, this pilot will create new/improved habitat to provide strongholds for the local GCN newt population. It also seeks to minimise the risk of delays to development and associated cost implications through a streamlined GCN licensing process.

To learn more about GCN and their distribution in the Borough, see the Conservation Strategy which Natural England has prepared for the Council (Annex 1).

The current approach

National planning policy requires developers to adhere to the 'avoid - mitigate - compensate' hierarchy for the impacts of development on protected species:

- **Avoid** - develop an alternative site or use technology to eliminate the impacts. This is the most common and preferable approach to avoiding harm;
- **Mitigate** - take actions during design, construction and operation to minimise or eliminate impacts;
- **Compensate** - providing a compensation site elsewhere of comparable habitat to relocate the amphibians to. This is less common and a last resort to offset impacts.

Under the legislation, where offences are likely, developers on sites with GCN are required to carry out a survey and assessment before applying to Natural England for a licence before operations on site can begin (this process is summarised in the diagram in Annex 2).

Survey and mitigation work can be costly and time-consuming and, because it is restricted to the GCN's active season (March to June and September to October) can delay the assessment and grant of planning permission for building works.

It can also be a quite rigid and reactive way of protecting the species, which tends to emphasise a narrow individual site-based focus, rather than managing their population as a whole on a landscape wide basis. The conservation status of the overall population in an area is sometimes not helped by this approach as it has a tendency to squeeze the GCN in around development rather than putting their habitat first.

To see if a better way could be found to offer more support to the GCN population in Woking Borough, Natural England and the Council has developed an alternative strategic approach. This guidance explains how the approach works and how developers can take advantage of it. It details how the pilot project will be reviewed and lessons learnt to refine the process. If successful, there is potential for this approach to be rolled out elsewhere in the UK.

Taking a new approach - in summary

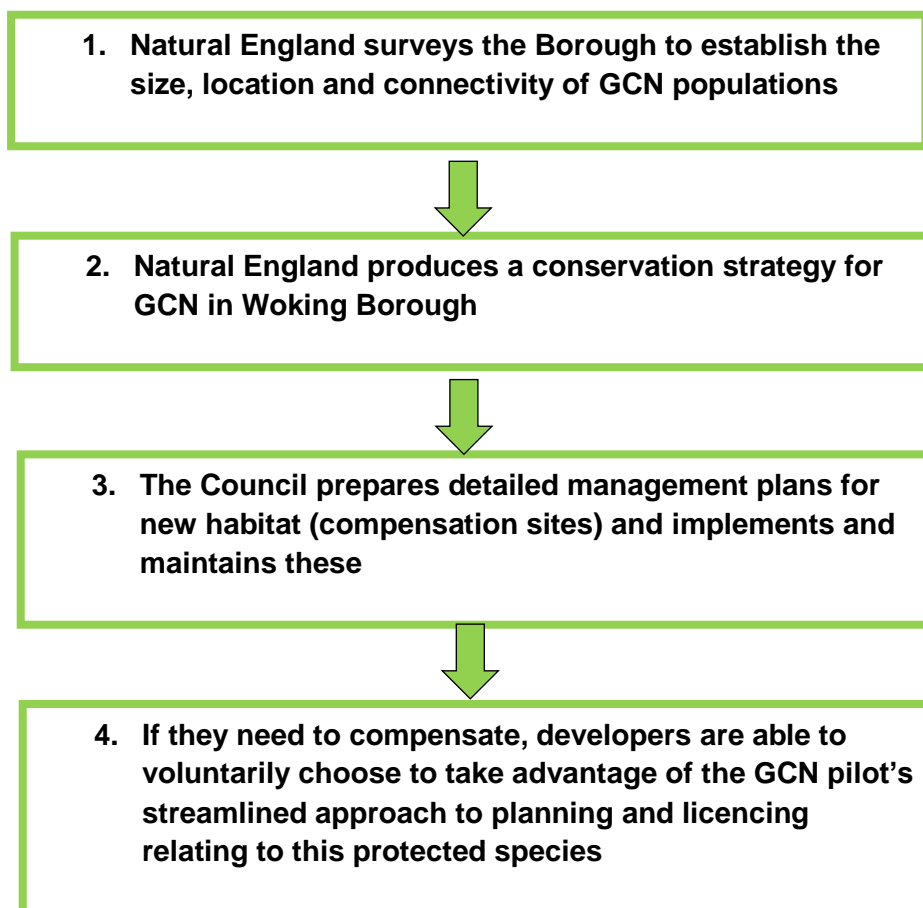
This pilot takes a more proactive, landscape-orientated approach to protection, focusing conservation on the GCN habitats that will bring the greatest benefits to the GCNs' overall population in Woking Borough.

The Council and Natural England have undertaken survey work to understand the distribution of GCN across the Borough, identify the most important areas of habitat and assess likely impacts on the species.

The Council is now able to take into account the likelihood of impacts on GCN in deciding the locations in which to allocate land for development and to establish new habitat where it will most benefit the species' wider network of habitat. When development comes forward that would result in habitat loss, the habitat gains will already be in place to compensate for this. Whilst some individual GCN will be affected, the local GCN population overall will be improved.

Taking a new approach - in detail

The new pilot approach has four main stages:



These are explained in more detail below:

Stage 1 - Natural England surveys the Borough to establish the size, location and connectivity of GCN populations

Initial surveys were completed in summer 2015. An innovative new survey process has been used to test for traces of GCN DNA in pond water to establish where the amphibians are present. The information gained also helps us to better understand the potential future opportunities to improve connectivity of what could otherwise be fragmented newt populations. Additional surveys will be programmed in the future to maintain up to date information on the distribution of GCN in the Borough.

Stage 2 - Natural England produces a conservation strategy for GCN in Woking Borough

A conservation strategy for GCN in Woking Borough has been prepared. You can read this in Annex 1 of this guidance. In general, the area of around 500m radius from a pond forms the main potential GCN habitat.

The conservation strategy uses a series of coloured zones to show where it is most important to retain, enhance and link up existing GCN populations in the area; where some impacts are acceptable as these will be limited; and where new habitat will be created to ensure a healthy overall population and balance the impacts of development. In Woking Borough, three zones are identified: green, yellow and orange. If a similar survey were to be undertaken elsewhere, this might also include a fourth red zone (sites of high conservation value for GCN where there would be a strong presumption against development).

The conservation strategy provides:

- a description of the status and distribution of GCN in Woking
- an overall assessment of the impact of planned and likely windfall development
- an assessment of the mitigation opportunities and setting of mitigation requirements on planned development sites
- a quantification of habitat compensation needs
- a compensation site selection and feasibility assessment of the strategic compensation sites, and
- proposals to determine which developments are eligible to rely on strategic compensation, where survey and mitigation are needed and where there should be a presumption against development.

Stage 3 - The Council prepares detailed management plans for new habitat (compensation sites) and implements and maintains these

GCN populations are most viable where they are spread across ponds on a number of sites, linked by suitable habitat. The conservation strategy (Annex I) provides more information about where compensation habitat could best be provided. Specific sites for compensation habitat will be identified over the coming months.

Woking Borough Council will commission detailed design and management plans for each new habitat area (compensation site) before these are created and are subsequently

maintained, in line with the conservation strategy. Improved habitat areas will be established before any impacts on GCN are expected on development sites participating in the pilot.

There are SNCIs at some of these locations. The level of protection enjoyed by the SNCIs (for any features they support in addition to GCN) is set by planning policy and is unaffected by the Pilot. The selection of sites for compensatory habitat and management planning on these sites will take into account the measures necessary to conserve the particular interest of any SNCIs which may be affected.

Whilst the Council aims to make new habit areas accessible for residents as well as wildlife wherever possible, there may be instances where this is not possible. For example, in the future there is potential for habitat to be created on private as well as public land, with the landowners consent: the listing of a private site as compensation habitat in this strategy does not imply any right of public access. Access to wildlife is not a function of EPS licensing and it is normal to locate compensatory habitat for GCN in less accessible locations, so as to reduce the risk of the introduction of fish and other impacts associated with access. The Pilot is not likely to have any significant effect on the amount of contact between people and nature.

The Council will fund this habitat improvement, partially subsidised by developer contributions.

[Stage 4 - Developers are able to voluntarily choose to take advantage of the GCN pilot's streamlined approach to planning and licencing relating to the priority species](#)

After following the 'avoid - mitigate - compensate' hierarchy, if a developer must compensate for the impacts of their development on GCN, they will have the option to take part in this pilot.

Participation in the scheme is not mandatory, however the Council encourages developers of schemes of any size to get involved in light of the mutual benefits, in particular to local biodiversity.

Guidance for developers

The pilot project does not replace statutory requirements regarding priority habitats or species. **It is still necessary to avoid, mitigate or compensate for any protected species habitat loss arising from a development.** You will still need to carry out an initial desk top survey to consider the presence of priority plant and animal species. Other protected species may also be present on sites and may still require full mitigation.

Participation in this pilot may however avoid the need for you to carry out additional detailed field surveys, if GCN are or could be present. In this way the pilot will assist by reducing the delays and costs normally associated with navigating the planning and licencing processes in relation to GCN.

Over the great majority of Woking Borough, participation in the pilot means you will not require an upfront ecological survey to full assess GCN impacts on your site before a planning application is made. However, this does not remove the need to follow the 'avoid -

mitigate - compensate' hierarchy or the need to survey and assess impacts from proposed development in relation to other protected and priority species.

Participation in this pilot is voluntary; the Council does not require a development to follow this approach. The choice is open to you to take part in this new strategic approach or continue to follow the existing planning and licensing path of making your own provisions for the species, where necessary applying for an individual licence from Natural England (as illustrated in Annex 2).

For sites where GCN habitats can not be avoided or successfully integrated into the development with suitable mitigation measures, alternative compensation habitat is required. In these cases, for suitable types of development (see below), we would very much welcome your participation in the pilot as this will help both the Council and Natural England to implement and refine the new approach. Participation will also help us to achieve better outcomes for these local amphibian populations.

The pilot covers all types of development identified in the Council's Draft Site Allocations consultation document (June 2015). These include housing, retail and industrial (and associated infrastructure), in line with the Core Strategy. In line with the Conservation Strategy (Annex 1), windfall (non-allocated) development is also able to take part in the scheme where this would be housing development.

The steps you'll need to follow to take advantage of the pilot approach are illustrated in the following diagram.

You will need to identify in which zone your site is located and follow the actions shown. Information about how we calculate contributions is set out below, including a worked example.

Please note that, even if your development is in a 'green' zone, some action is necessary to ensure development would not harm and would enhance the GCN population.

Natural England's surveys have confirmed that Woking Borough has no 'red' GCN zones in which there should be a strong presumption against development. This means that most areas can take advantage of the pilot approach. The scale of contribution required will vary but the scheme is designed always to achieve savings for the developer in terms of time and money.

Once planning permission has been granted for your development (subject to other considerations), with the development's participation in the pilot and contribution secured through a section 106 legal agreement, you will not need to apply to Natural England separately for a licence to carry out works affecting the GCN.

If GCN are found during works on your development site, you are not required to relocate these as part of the pilot approach. However the Council's organisational licence will allow it to authorise certain persons to capture and transport GCN to suitable habitat, out of harm's way. You may wish to brief contractors working on your site about GCN and the Council will be able to provide content to inform site posters (for example, showing what to look out for and who to contact if GCN are found). Best practice guidance will also be developed and issued to participants with the permit and planning permission.

The pilot approach – Development and Great Crested Newts

Step 1: When preparing your scheme and planning application: (a) Follow the Avoid – Mitigate – Compensate hierarchy (NPPF, para. 118); (b) Carry out initial desktop survey to consider presence of priority protected species; (c) If GCN likely, consult the Conservation Strategy (Annex 1) to see which distribution zone the development site falls into and what action you need to take; (d) Check if the development can participate in the scheme (see Guidance for Developers).

Green Zone: Significant but low likelihood of development having direct impact on GCN. Contribution payable (see Calculating Developer Contributions). No further survey or mitigation required.

Yellow Zone: Moderate likelihood of direct impact on GCN. Important for connecting habitats, so prone to indirect impact from habitat fragmentation. Contribution payable (see Calculating Developer Contributions). No further survey or mitigation required.

Orange Zone: Contain greatest value GCN habitat, development would have direct impact. Contribution payable (see Calculating Developer Contributions). No further survey or mitigation required.

Note: In the Littlewick and Coxhill Green orange zones, surveys and full assessment of impact are required upfront. The LPA will consult Natural England to decide if the impacts of projects in the **Littlewick and Coxhill Green orange zones and, for commercial developments or residential developments of over 10 dwellings, in the Hook Heath orange zone**, can be addressed through the pilot project. There is no automatic survey requirement in the Hook Heath orange zone but taking into account the advice of Natural England, the LPA may require submission of information for individual cases.

Red Zone: For any site within 500m of a waterbody, where impacts on GCN cannot be ruled out. (No red zone in Woking Borough).

Step 2: If you need to 'compensate' and would like to opt into this pilot, confirm in writing your intention to use WBC compensatory GCN habitat when submitting your planning application, or as part of your pre-application enquiry. State development zone (as listed above), the number of ponds within 500m of a boundary of the site, and your willingness to enter into Section 106 agreement to make payment.

Step 3: LPA consults NE standing guidance and this pilot guidance during assessment of the planning application.

Step 4: Planning permission granted (subject to other planning considerations). Contribution for GCN habitat creation is secured through a Section 106 legal agreement and usually under the Council's organisation licence from NE. The LPA issues a permit to carry out works affecting GCN. No need to apply separately to NE for a licence. Best practice guidance will also be provided.

Step 5: Proceed with development. We encourage you to keep a watching brief on the site for GCN. There is an opportunity for any GCN found on site to be moved out of harms way in line with the guidance provided.

Any queries? See the FAQs or contact us at greeninfrastructure@woking.gov.uk

Calculating developer contributions

Rather than ask you to arrange alternative compensation land yourself, under licence from Natural England, the pilot allows you to instead make a financial contribution to assist the Council to create new or improved habitat for GCN in suitable locations elsewhere in the Borough.

The tariff levels are outlined below. These have been developed based on the following assumptions and principles:

- The pilot project anticipates providing habitat compensation of eight ponds, each with adequate hibernacula and set within good quality terrestrial habitat, across three locations (opportunities for additional provision will be sought as part of other suitable Council projects). All works will be guided by a management plan;
- Estimated costings for the works (around £44,000) were informed by Countryside Stewardship payment rates and feedback from Natural England's consultants. These factor in: creation/restoration of each pond and hibernaculum; maintenance; consultancy to prepare management plans; ecological monitoring; Natural England advice; and contingency;
- These estimated costs and a notional¹⁰ working assumption of 50 contributing tariff units through the life of the pilot, have informed calculation of a standard tariff charge of (£900).
- The charge to the developer will be the standard tariff unit, adjusted according to the:
 - (a) **zone in which the development is located:** the greater the likely impact to the GCN the higher the multiplier applied to the tariff unit e.g. green zone = x1 tariff unit, yellow zone = x2; orange = x3.
 - (b) **the number of potential GCN ponds within 500m of the development site:** the greater the number the higher the multiplier applied to the tariff e.g. 1 pond = x1 tariff unit, 2 ponds = x2, 3 ponds = x3, etc. Potential ponds are those where GCN could potentially be present. The larger the development site area, the more likely this will be within 500m of a number of such ponds, therefore this provides a degree of scaling to the proposed charging structure. The final version of this guidance will be accompanied by a map showing the locations of potential GCN ponds.
 - (c) **and the scale of the development:** to ensure a flat rate for the smallest participating schemes.
- All types of building or change of use of land participating in the pilot will pay charges, as calculated above.

¹⁰ At this stage it is not possible to predict the number of developments or the proportion that will participate in each zone, especially for windfall developments.

Contributions are designed to be below the typical cost of the GCN ecological surveys you would normally need to carry out.

Zone (see annex 1) or scale of development	In 500m of 0 or 1 GCN pond (see note b above)	In 500m of 2 ponds	In 500m of 3 ponds	In 500m of 4 or more ponds
Orange zone (Littlewick, Coxhill Green and Hook Heath)	<p>In the Littlewick and Coxhill Green orange zones, surveys and full assessment of impact are required upfront.</p> <p>The LPA will consult Natural England to decide if the impacts of projects in the Littlewick and Coxhill Green orange zones and, for commercial developments or residential developments of over 10 dwellings, in the Hook Heath orange zone, can be addressed through the pilot project.</p> <p>There is no automatic survey requirement in the Hook Heath orange zone but taking into account the advice of Natural England, the LPA may require submission of information for individual cases.</p>			
Orange zone (rest of)	X3	X6	X9	X12
Yellow zone	X2	X4	X6	X8
Green zone	X1	X2	X3	X4
Regardless of zone (except in Littlewick Coxhill Green and Hook Heath as above), any development of 1 net additional dwelling or less than 100 sqm. other floorspace	X1	X1	X1	X1

Notes:

1. Please note the Council's Legal Service may make an additional charge to cover costs incurred to in relation to the Section 106 agreement securing the GCN charge.
2. Proximity to ponds will be measured by distance from the closest point on the development site boundary.
3. Where a site lies across more than one zone, the zone with the greater likelihood of GCN presence and therefore impact will be used as the basis for this calculation.

Example

Developer A has identified through an initial survey that, following usual practice, he would need to carry out a detailed GCN field survey. The developer opts instead to take part in this GCN pilot, to avoid delay to the programme and avoid the need for the survey costs.

The development proposed is for 10 net additional dwellings in a location in the green zone. There are 2 potential GCN ponds within 500m of the site.

Following the matrix above, Developer A would need to contribute the following to take advantage of the pilot approach:

Tariff unit (£900) x 2 = **£1,800** + any legal costs to prepare the S106 legal agreement.

Frequently asked questions

This section sets out the most commonly asked questions we've received about the pilot and answers to these.

Q How do we opt into the pilot?

A Please make clear during any pre-application correspondence and in your planning application submission (Design and Access / Planning Statement) that you wish to be part of this pilot. An ecological assessment is in some cases required to validate a planning application. If you do not provide an ecological assessment or make clear that you wish to participate in the pilot, this could delay registration of your application.

Q Is participation mandatory?

A No. This is not a compulsory model and the option to apply for licences, as at present, remains.

Q What is the planning status of this guidance?

A This guidance, and the wider Natural Woking Strategy and Supporting Information documents (draft documents available separately upon request from the Council), are informal planning guidance. More details about the status and consultation which has informed this pilot are provided in see Appendix 8 of the Natural Woking Supporting Information document.

Q What consultation informed development of the pilot?

A Following initial press coverage (August 2015), the views of nature conservation representatives were sought at an early stage through a stakeholder workshop (October 2015). The pilot approach was developed, drawing on in house expertise within Natural England and the Council. A targeted consultation of conservation, developers, planning agents and other interested parties, ran from 13 January to 10 February 2016, feedback from which informed the final methodology of the pilot.

Q How can you be confident that the survey results used to inform the Conservation Strategy are adequate?

A The strategic approach in Woking Borough which the Conservation Strategy outlines is based on the following research:

- Habitat suitability survey, which provides information on habitat quality and management requirements of 100 ponds throughout Woking Borough.
- eDNA surveys of 50 ponds throughout Woking Borough which indicate GCN presence within these ponds
- Modelling which has been used to predict how environmental factors affect the distribution of GCN in the Borough.

There is a strong coincidence between the field records and the predictions from the modelling. Natural England is therefore confident that these surveys and studies provide an accurate picture of GCN distribution throughout Woking Borough. This approach has been endorsed by consultation with local ecology experts.

Q Who is responsible for ensuring that the conservation plan is robust, that the right amount of habitat is being created and that the habitat has longevity?

A Natural England is responsible for checking that the conservation strategy is likely to result in a healthy long-term population of newts and that it satisfies the legislation under which GCN are protected. This includes checking that the right amount of habitat is created, that it is of good enough quality and that it is secured for an appropriate length of time.

Q Will new ponds etc. be created or will existing ones just be enhanced e.g. with more weeds?

A We intend that new habitat will be created and existing habitat enhanced as part of the project.

Q Is this pilot resulting in a change in the law?

A No. The law relating to European Protected Species remains unchanged and the proposals are fully compliant with the law. Natural England will still be ensuring that the law is complied with, in accordance with its statutory role.

Q How will development operations affecting GCN be licensed in the pilot?

A The proposed strategic pilot would be delivered through an organisational licence being issued to Woking Borough Council. This licence would be issued under the Conservation of Habitats and Species Regulations 2010 (as amended) (the “Habs Regs”) and would allow the Council (as the licensee) to authorise certain persons to carry out specified activities on development sites affecting GCN which would otherwise be offences under the Habs Regs.

Q What will the organisational licence cover?

A The organisational licence would cover activities relating to both the development sites and the compensation sites for GCN which are to be managed over a number of years by Woking Borough Council. On development sites, authorised activities would include the

damage and/or destruction of GCN habitat, and the disturbance, killing or injury of GCN. On the compensation sites, authorised activities would include the creation or restoration, as well as ongoing management of the habitat, so that it can be assured that the negative impacts on development sites are fully addressed, so as to maintain or improve the conservation status of GCN in Woking.

Q Does the proposed scheme risk contravening the legislation which protects GCN?

A As with any other protected species application, before an organisational licence is issued, the proposals will be assessed against the three legal tests required under in the Conservation of Habitats and Species Regulations 2010 (as amended) (the “Habs Regs”), namely:

- **Purpose** (in this case: imperative reasons of overriding public interest including those of a social or economic nature and beneficial consequences of primary importance for the environment);
- That there is **no satisfactory alternative**;
- That the action authorised will not be detrimental to the maintenance of the species concerned at a **favourable conservation status** in their natural range.

Under the Habs Regs, Natural England is the competent licensing authority and will ensure that the three licensing tests are assessed objectively.

Q What happens to any GCN that are on a development site?

A The strategic provision of compensatory habitat will ensure a net benefit to GCN. There will not therefore be a reliance on developers to trap and translocate individuals of the species, unless it is considered necessary to populate the compensatory habitat. It is intended that compensatory habitat will be placed so that it will be colonised by GCN through natural dispersal from the existing strongholds of this species. If this is successful there will be no need to relocate GCN to establish a viable population in compensatory habitat. Where natural colonisation can be relied upon, the licence will not require trapping and relocation. This will allow investment in the pilot to be focussed on habitat provision. This approach will have the benefits of streamlining both the development and licensing processes, whilst ensuring the long-term protection and enhancement of GCN populations within Woking Borough.

Q What should be done with any GCN encountered during development?

A In cases where GCN are found during operations on development sites, the Council’s organisational licence from Natural England will authorise certain persons to capture and transport GCN to suitable habitat, out of harm’s way.

Q How can Natural England and the Council be sure that the compensation will deliver a net improvement for GCN in the Borough?

A Planned development in Woking will have only a modest impact on GCN. The habitat compensation to be provided by the Council will be on a suitable scale and will be in areas of the Borough where there is a strong GCN presence. It will be located to support the long term viability of the existing GCN populations and extend the area of habitat available to them. Woking Borough Council is committed to managing and safeguarding the compensation sites for 25 years.

Q Is a similar approach planned for GCN and/or other protected and priority species in other areas of the country?

A A strategic approach which uses the same principles as the pilot in Woking could potentially benefit GCN in other parts of the country and help to enable development. The Natural England intends to explore a strategic approach on a larger (perhaps county) scale, in a location where there is more extensive overlap between GCN populations and areas in which development is proposed. The Woking pilot is focussed on regulation of development. Exploration of a strategic approach at a county level, encompassing much larger areas, would allow a wider range of conservation mechanisms to be employed.

Q Is a similar approach planned for other species in Woking Borough?

A Natural England and Woking Borough are actively considering the possibility of similar strategic approaches for other species in the Borough. We are keen to explore proactive approaches which protect and improve the Favourable Conservation Status of protected species in a more strategic way, whilst also streamlining the development process where possible.

In the development of any such strategic scheme, we will ensure that the approach adopted is suitable for the species in question and their particular distribution in Woking Borough. These will also be informed by lessons learnt over time through this GCN pilot project. We will keep stakeholders informed as plans progress. Woking Borough Council's [green infrastructure webpages](#) will also be kept up to date on the latest progress.

Advice for planning officers

Once the pilot is in operation (from the end of March 2016):

Applicants will indicate their intention to take part in the GCN pilot when submitting their pre-application enquiry or planning application.

Please send a planning consultation to Natural England's Area Team and Surrey Wildlife Trust as normal. Colleagues at both organisations are fully aware of the pilot.

If you have any queries, in the first instance please contact the Council's Green Infrastructure team on extension 3477 or 3013.

Monitoring and review

A monitoring programme will be put in place to provide regular information to Woking Borough Council and Natural England as to the conservation status of the overall GCN population in Woking Borough.

This will enable the Council to make informed assessments as to whether a permit for activities affecting European protected and priority species pass the three legislative tests and can be issued under the authority of Natural England's organisation licence in the case of each development.

The monitoring results will be used to inform any adjustment necessary to maintain the effectiveness of the pilot for GCN and to ensure that contributions are set at a reasonable rate for development.

The duration of this pilot is to be determined. This decision will be guided by monitoring of the take up and outcomes of the pilot over time. If successful, the scheme will be made permanent. Natural England will also consider the suitability of rolling out similar strategic approaches elsewhere in the country, having considered the outcomes of this pilot.

The compensation sites provided through the pilot will be maintained for 25 years.

Woking Borough Council will consider any lessons learnt from this pilot to inform future initiatives to support other protected species in the area.

More details about monitoring and review of the pilot are explained in the conservation strategy in Annex 1.

Glossary and abbreviations

Allocated site / site allocation – identification of a site for future development, for a specified use or mix of uses, through a Development Plan Document. These are development sites proposed to deliver the amount of housing and other development set out in the adopted Woking Core Strategy (see <http://www.woking2027.info/corestrategy>). Sites are allocated for future development based on the guidance set at national and local level, which looks to direct new development to within or adjoining existing built up areas and requires consideration to be given to the wide variety of issues that may affect a site.

A formal development plan document (DPD) is prepared showing the proposed allocated sites, informed by extensive public consultation. The Woking Site Allocations document is being prepared; the latest version is available at <http://www.woking2027.info/allocations>

Compensation site – new habitat created in the Borough to more than compensate for any loss of GCN habitat as a result of development.

Development Plan Document (DPD) – local planning documents containing the core planning policies and proposals. These are subject to independent examination. Woking Borough Council has prepared the following DPDs: a Core Strategy and Proposals Map. It is preparing a Development Management Policies and Site Allocations DPDs.

Derogations – licences which are issued by the competent licensing authority to permit a person, persons or organisation to carry out activities which are otherwise prohibited under legislation. For licences relating to European Protected Species (of which GCN are one), the Conservation of Habitats and Species Regulation 2010 (as amended) make Natural England the competent licensing authority in England.

Dwellings per hectare – a measure of residential development density. Core Strategy Policy CS10 – Housing provision and distribution sets out indicative density ranges for different parts of the Borough.

eDNA – innovative DNA testing of water used to identify presence of existing GCN.

European protected species (EPS) – the term for a variety of animal and plant species (of which the GCN is one) which are listed on Schedule 2 and 4 of The Conservation of Habitats and Species Regulations 2010 (as amended). The Habs Regs afford these species a high level of protection, making it an offence to (among other things) deliberately capture or disturb any animal of a EPS and to deliberately destroy any breeding or resting site of a EPS.

Favourable conservation status - a situation where a habitat type or species is doing sufficiently well in terms of quality and quantity and has good prospects of continuing to do so in future.

Favourable reference values – numerical values that define what Favourable Conservation Status means for a species or habitat.

GCN (great crested newt) – a European Protected Species. The GCN, its eggs and their breeding sites and resting places are protected under the Habs Regs.

Habs Regs – abbreviation of the Conservation of Habitats and Species Regulations 2010 (as amended), the domestic legislation which covers European Protected Species. The Habs Regs implements the EC Directive 92/43/EEC in the United Kingdom.

HSI (Habitat Suitability Index) – a set of ten factors known to affect this species which are converted to numerical values to aid evaluation of the general suitability of a pond, or ponds, for great crested newts. An HSI is a numerical index, between 0 and 1. Values close to 0 indicate unsuitable habitat, 1 represents optimal habitat.

Local planning authority (LPA) – a council's planning service. For this area the Local Planning Authority for most types of development is Woking Borough Council. Surrey County Councils is responsible for waste and minerals planning.

National Planning Policy Framework (NPPF) – sets out the Government's vision for sustainable development through a set of economic, environmental and social planning policies.

NBN - National Biodiversity Network. For further information please visit <http://www.nbn.org.uk/>

Organisational licence – a licence which is issued to an organisation (the licensee) which permits them to carry out - and authorise third parties to carry out - activities which are otherwise prohibited under the Habs Regs. The licensee (in the case of this scheme, Woking Borough Council) are responsible for the oversight of activities carried out under the licence.

Priority species - UK species which were identified as being the most threatened and requiring conservation action under the UK Biodiversity Action Plan (UK BAP). More information is available at <http://jncc.defra.gov.uk/page-5717>

Protected species – Plants or animals whose population is declining in the wild, from human or other causes, and so they are protected from harm or destruction by law. In the UK, species are protected under international, European or UK law.

Safeguarded sites – a development site identified for development at a later stage in the timeframe of the local planning document. In addition to the normal requirement for a planning application, development of the site will not proceed until a local policy trigger is reached.

SARG – Surrey Amphibian and Reptile Group

SWT – Surrey Wildlife Trust

Windfall development - Not all development land is allocated in forward planning documents like the Site Allocations development plan document. Windfall sites are those which come forward on an ad hoc basis as unforeseen circumstances arise. These sites are assessed against planning policies at that time.

More information

If you have any questions about the GCN pilot please contact:

Green Infrastructure, Woking Borough Council:

- Email greeninfrastructure@woking.gov.uk
- Telephone 01483 743477 or 743013

Natural England:

- Email Dan.L.Mills@naturalengland.org.uk
- Telephone 0300 060 1618

A Conservation Strategy for Great Crested Newts in Woking, Surrey

Summary

- 1. The great crested newt is strictly protected by law. Operations which may infringe this protection are likely to require a licence to proceed lawfully. At the present time licensing (and planning) decisions relating to GCN are typically made on a site by site basis. This strategy sets out a landscape scale approach which will facilitate greater certainty that development will provide a net benefit to the species.*
- 2. Evidence indicates that the main populations of GCN are at three locations in Woking.*
- 3. Conservation options for these three main populations are set out to maintain or improve their long term viability.*
- 4. The distribution of GCN can be categorised within distinct zones, relating to their frequency of occurrence and the level of impact which development is likely to have on them. Generic zones are defined: red – avoidance; orange -high impact; yellow – medium impact; and green – low impact.*
- 5. Three zones are identified in Woking: orange, yellow and green. There are no red zones, i.e. locations in which there should be a strong presumption against development because of impacts on GCN.*
- 6. The draft development site allocations identified in the Council's Draft Site Allocations document (June 2015), are predicted to lead to the direct loss of two ponds, in areas of low GCN occupancy (in the green zone). 35 ponds are within 500m of draft site allocations in areas of higher occupancy (in the orange and yellow zones) but it is expected that significant impacts on the majority of these can be avoided or fully mitigated. The low scale of expected windfall development suggests that windfall will not have a significant impact on GCN.*
- 7. The avoid-mitigate-compensate hierarchy is established as a matter of policy by the National Planning Policy Framework and to an extent as a matter of law by the Habitats Regulations and related European community guidance.*
- 8. Avoidance of impact can be achieved to a great extent: the draft development allocations are expected to have modest impact; the council is advised to steer development away from high impact locations; and some avoidance can be secured by protocols on development sites.*
- 9. Mitigation will be secured by retention of green corridors within development sites and, within the Littlewick Coxhill Green and in some instances in the Hook Heath orange zones, by a requirement for survey and assessment work to inform necessary measures.*

10. *The range of sites which is owned or managed by the Council and the expanding suite of Suitable Accessible Natural Green Spaces (SANGS) provides good opportunity to establish areas of new or improved habitat as compensation for residual impacts.*
11. *It is proposed that eight ponds are created or restored as habitat to compensate for the potential residual impacts of development. It is Natural England's considered view that this scale of habitat improvement would more than offset the level of impact on GCN likely to arise from planned development in Woking in the period to 2040. Broad proposals are made for the location and timing of this habitat compensation, with the intention that it is put in place ahead of any likelihood of development impacts.*
12. *Developers in the Borough may avoid the normal ecological requirements in relation to GCN, including those for survey and impact assessment, as long as they agree with the Council a contribution to strategic measures for GCN which are provided by the Council through this pilot project.*
13. *The Littlewick, Coxhill Green and - in some instances- in the Hook Heath orange zones are an exception to this, where developers would be expected to undertake survey and assessment work, before they are able to agree with the Council a funding contribution which would allow them to rely on the Council's strategic measures for GCN.*
14. *It is advised that the funding contributions required should be highest in the orange zone and lowest in the green zone, so as to reflect the likelihood of impacts on GCN.*
15. *Habitat compensation can be put in place on a timetable which allows it to be ready ahead of need for any development permitted from April 2016 onwards. This habitat will be managed and safeguarded by the Council for 25 years.*
16. *Subject to management plans which give confidence that the strategic compensation habitats will be colonised by GCN through natural dispersal, it is anticipated that the normal standards for exclusion, trapping and translocation of GCN on development sites will not be required as a norm for development sites which may contain GCN.*
17. *It is anticipated that the Council will commit to the strategy through signing a Memorandum of Agreement with Natural England. Natural England will grant an organisational licence which allows the Council to authorise development operations on sites with planning permission in the Borough, for developments which are participating in the strategic approach. This will enable developers on these sites to proceed without risk of prosecution for operations affecting GCN.*
18. *A programme of monitoring and review will be put in place to ensure that the impacts of this pilot on GCN and development interests are understood. This will inform any necessary adjustment of the Council's strategic measures for GCN and potentially the application of similar strategic approaches for GCN elsewhere in the country.*

Contents

1. Introduction
 2. The great crested newt
 3. GCN distribution in Woking Borough
 4. Conservation options for GCN in Woking
 5. Generic GCN impact zones
 6. GCN impact zones in Woking
 7. The scale of development impact
 8. Avoidance, mitigation and compensation options – law, policy, guidance and practice
 9. Avoidance of development impacts on GCN in Woking
 10. Mitigation
 11. Compensation
 12. Scale and location of compensation
 13. Requirements on developers in the three zones
 14. Delivery timetables
 15. Confidence in delivery
 16. Procedures for licensing and planning permission for projects which may affect GCN
 17. Monitoring and review
- Annex 1 – Notes on modelling

1.Introduction

1.1 The great crested newt (GCN) has suffered considerable decline over the last century and as a result is afforded strict protection under the EU Habitats Directive, which is transposed into UK law by the Conservation of Habitats and Species Regulations 2010 (the 'Habitat Regulations'). This means it is illegal to, for example, take, injure, kill or disturb GCN or to damage their habitats. If someone has a legitimate reason to undertake activities that infringe this protection, such as building houses on a site occupied by GCNs, they are likely to require a licence (a derogation) to proceed lawfully. A developer seeking a licence must demonstrate that the activity is justified, that there is no satisfactory alternative to infringing the protection, and that they will take measures, such as trapping and relocating specimens or improving habitats, to avoid a detrimental impact on the local population of GCNs.

1.2 At the present time licensing (and planning) decisions are typically made on a site by site basis. This creates a risk, even where individual schemes are well designed, of GCN habitat becoming fragmented by developments. What this conservation strategy does is to consider development activities and the GCN population within the entire area of the Borough of Woking. This 'bigger picture', landscape scale approach facilitates greater certainty that conservation measures provided by development will be functional in the long term and that development will provide a net benefit to the species.

Summary point. *The great crested newt is strictly protected by law. Operations which may infringe this protection are likely to require a licence to proceed lawfully. At the present time licensing (and planning) decisions are typically made on a site by site basis. This strategy sets out a landscape scale approach which will facilitate greater certainty that development will provide a net benefit to the species.*

2. The great crested newt

2.1 The GCN is the largest of the native UK newts, with males sporting an impressive crest during the breeding season. It is a dark, rough-skinned animal with an orange under belly bearing a pattern of black spots unique to each individual. Its range is extensive, covering much of England with particular hot spots in pond-rich landscapes such as the Midlands meres and mosses and the Kent and Sussex Weald. GCN s have suffered a significant decline, largely due to the loss and fragmentation of quality habitat. However, small numbers of GCN s can persist in suboptimal habitats, as individuals may live for over a decade, which can be misleading in assessing status.

2.2 GCNs require ponds for breeding, from March to June, with the young leaving during late summer and early autumn. Vegetation in ponds offers both retreat and hunting grounds. During courtship, males display to females in more open areas of ponds. Females lay individual eggs onto the leaves of aquatic plants, folding the leaf over to protect the egg. To support successful breeding, ponds need to remain wet for most of the year, be free of predatory fish and not host large numbers of wildfowl such as ducks and geese. The land around a pond also affects the condition of the water and therefore the suitability of a pond.

2.3 Much of a GCN's life is spent out of water. Overland movements are mainly at night, when air temperatures are above 5 degrees and conditions are damp. Terrestrial habitat is

therefore equally important. The area of around 500m radius from a pond will form the main potential GCN habitat. Tussocky and rough grassland, scrub and woodland, hedgerows, banks and ditches, bare ground with fissures, disturbed ground and pasture are all suitable habitats. GCNs require good foraging places to find their invertebrate prey and need places to shelter from drought and predators. GCNs hibernate overwinter, often underground amongst tree roots, in mammal burrows, or above ground under suitable refuges like deadwood or rubble piles.

2.4 Although some individuals may cover half to one kilometre or more over land, many are faithful to the pond where they were born and remain in close proximity all year round. Therefore it is important that high quality terrestrial habitat resources are available close to ponds.

2.5 GCN populations are most robust when they are spread across a series of ponds on a number of sites, linked by suitable habitat. This allows animals to move to find suitable conditions when the quality of the habitat changes. For example, if a pond becomes unsuitable for breeding due to silting up or prolonged drought, GCNs could move to breed in other deeper ponds which are still holding water. If subsequently those ponds are then colonised by predatory fish, they may then again become more dependent on the ponds which occasionally dry out, as these are more likely to be free from fish.

3. GCN distribution in Woking Borough

3.1 Natural England has collated survey information provided by the Surrey Amphibian and Reptile Group and Surrey Wildlife Trust. It has in addition commissioned an eDNA survey (which indicates the presence or absence of GCN) in a sample of fifty ponds and habitat suitability survey (which provides information on habitat quality and management requirements) in a sample of one hundred ponds. Alongside this field survey information, modelling by Natural England and Surrey Amphibian and Reptile Group has been used to predict how environmental factors affect the distribution of GCN in the Borough. There is a strong coincidence between the predictions from the modelling and the field records. This gives us confidence in our understanding of the distribution of GCN in Woking.

3.2 The evidence indicates that there are three core meta-populations. These are located near Littlewick in the north-west; Hook Heath in the west, and Westfield in the south. Their locations are shown in Figure 1. There are sparse, sporadic records elsewhere in the Borough.

<p><u>Summary point.</u> <i>Evidence indicates that the main populations of GCN are at three locations in Woking.</i></p>

4. Conservation options for GCN in Woking

4.1 The three meta-populations are effectively separated by distance and long standing barriers to dispersal, such as rivers, major roads and other built development. Though they are not connected to each other, they are highly likely to be connected to other known locations of GCN outside the Borough. Given the nature of the barriers between the three meta-populations, if these populations can be extended spatially, it would be most realistic and beneficial to aim this at increasing connectivity with the populations outside the Borough, rather than with each other.

4.2 The available data offers a picture of the three meta-populations which can be summarised as follows

- The Littlewick cluster consists of a small number of ponds. These ponds are largely in good condition and the expectation is that the population is relatively secure. The priority for GCN in this location is to increase the number of ponds and extend their spread. The location of nearby council owned land should help to facilitate this.
- The Hook Heath meta-population occupies only one or two ponds on the edge of a golf course. This meta-population does not appear secure. There are some other ponds nearby in domestic gardens and elsewhere on the golf course. These do not offer a clear opportunity to bolster this population, though this has not yet been explored with the landowners and occupiers. The highest priority in this location is to ensure GCN friendly management of the ponds with most recent records of GCN, then explore with the landowners opportunities to provide more habitat.
- The Westfield population is spread over a larger number of ponds than in the other two locations but the ponds are in poorer condition for GCN. The priority in this area is not just to spread the population but to improve the condition of the existing ponds.

Summary point. *Conservation options for these three main populations are set out to maintain or improve their long term viability.*

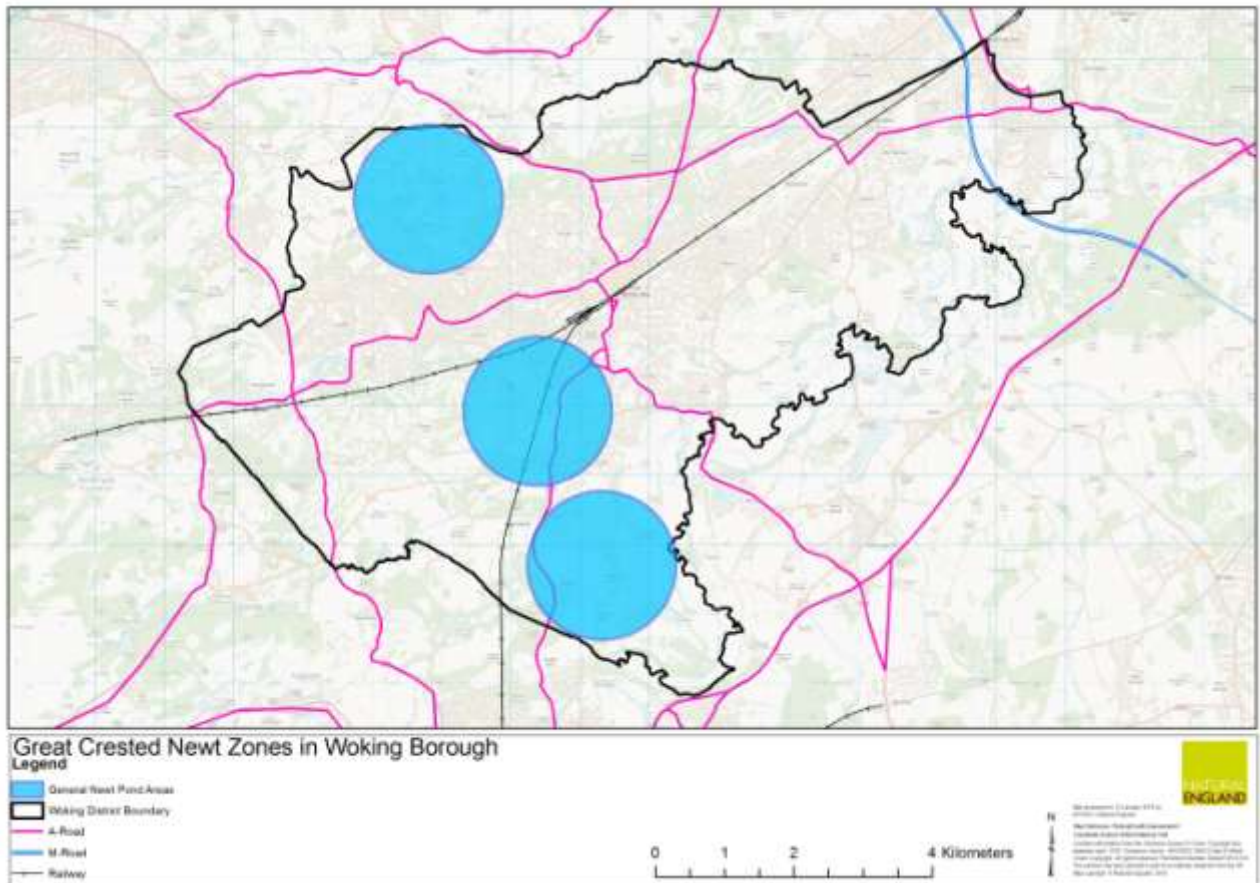


Figure 1: Main population centres of GCN: Top –Littlewick, Middle – Hook Heath, Bottom – Westfield.

5. Generic GCN impact zones

5.1 The distribution of GCN can be categorised within distinct zones, relating to their frequency of occurrence and the level of impact which development is likely to have on them. Four zones can be defined generically as follows -

5.2 **Red** zones. These zones contain key populations of GCN, which are important on a regional, national or even international scale. Given this importance, it is to be expected that loss or damage of these populations could not be neutralised by the provision of compensatory habitat elsewhere. These locations could be considered the ‘crown jewels’ for GCN. Sites of Special Scientific Interest designated for GCN would fall into this category. It is advised that planning policy should put in place a presumption against development in these locations, to ensure as far as possible that development impacts on GCN are avoided.

5.3 **Orange** zones. These contain main populations centres for GCN, albeit not on the same level of importance as those defining the red zone. The boundaries of orange zones should normally be drawn to encompass a 500m buffer around the ponds which are thought either to have the highest numbers of newts in the strategy area or to be the most robust clusters of breeding habitat. Development with a significant land take in these zones would be expected to have a relatively high impact on GCN on average.

5.4 **Yellow** zones. These zones are also important for GCN but are less densely populated by the species. They are important, in particular, as connecting habitat between ponds within each meta-population area and with other GCN habitat within or outside the strategy boundary. The boundaries of these zones are drawn on the basis of expert judgement on where the most important areas of natural dispersal are likely to be. Development in this zone would be expected have a medium impact on average, either by removing habitat occupied by GCN or by creating obstacles to movement between areas used by the species, which could lead to population fragmentation.

5.5 **Green** zones. GCNs are sparsely distributed in this zone. What is more, taking into account the location of other records of GCN across a wider area, it does not appear likely that the green zone contains important pathways of connecting habitat for the species. Development on average would be expected to have a low impact in this zone. It remains possible, nevertheless that development would encounter GCN in this zone and development projects could commit offences under the regulations.

Summary point. *The distribution of GCN can be categorised within distinct zones, relating to their frequency of occurrence and the level of impact which development is likely to have on them. Generic zones are defined: red – avoidance; orange -high impact; yellow – medium impact; and green – low impact.*

6. GCN impact zones in Woking

6.1 GCN impact zones of the type defined above can be mapped in Woking, based on the extent of habitat and the location of the three main meta-populations and other scattered records.

6.2 Natural England's assessment of the most important areas for GCN in the Borough, on the basis of the extent and quality of habitat, is that they are not more important or fragile than GCN sites in which we would expect to license unavoidable damage in the course of our normal licensing work, if it was justified in relation to tests set by the Regulations. Natural England's advice is that there are no areas in the Borough of such importance for GCN that development should be ruled out. Thus there are no red zones for GCN identified in Woking.

6.3 The main three meta-populations are defined as orange zones. Yellow zones are defined around them. The boundaries of these have been judged to reflect the location of records outside the orange zones, the distribution of habitats most suitable for GCN, and the location of barriers to GCN dispersal, such as busy roads, rivers and built development.

6.4 A green zone has been defined and covers an extensive proportion of the Borough.

6.5 All three zones are shown in figure 2. In all zones, other biodiversity issues must still be considered.

Summary point. *Three zones are identified in Woking: orange, yellow and green . There are no red zones, locations in which there should be a strong presumption against development because of impacts on GCN.*

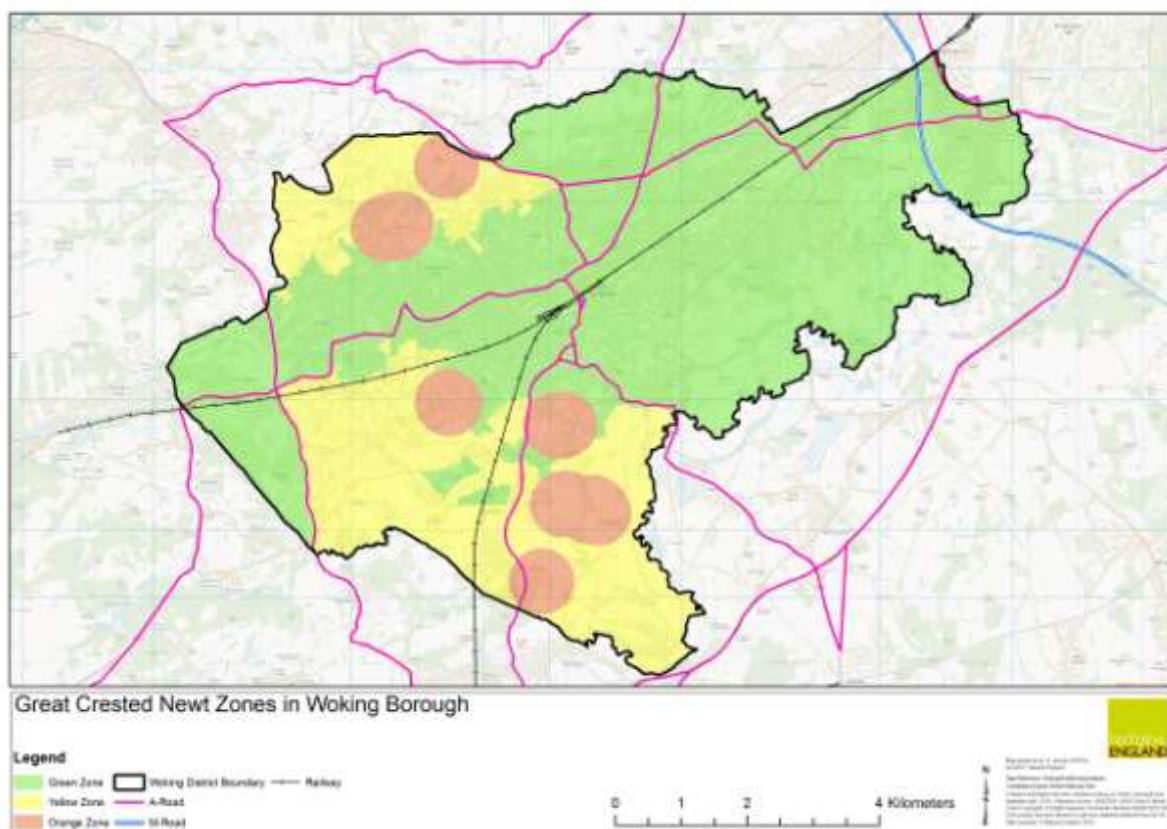


Figure 2: Great Crested Newt Zones in Woking Borough

7. The scale of development impact

7.1 The scale and likely location of planned development in each of the zones can be estimated from the mapped draft development allocations for 2015 to 2040 in the Council's Draft Site Allocations document (June 2015)¹¹ and from predictions of windfall developments.

7.2 There are no draft allocations near to the Littlewick meta-population. There are a number of draft allocations for residential development, which stretch between the Hook Heath and Westfield meta-population areas. These are more likely to affect the former than the latter, because of the existing constraints (roads, watercourses and built development) on dispersal to and from the Westfield meta-population.

7.3 Across the Borough it appears that only two ponds are likely to be lost directly to planned development. These are in areas with relatively low likelihood of GCN occupancy. A much larger number of ponds, 141, is within 500m of a draft allocation boundary. This is the distance from possible GCN ponds within which Natural England would normally advise developers to assess impacts on GCN. The majority of these 141 ponds are within areas with a low likelihood of GCN occupancy: 65% in the green zone; 19% in the yellow zone; and 16% in the orange zone. Of those ponds in the orange and yellow zones, the majority

¹¹ <http://www.woking2027.info/allocations>

are likely to be affected only slightly and in many instances any effect can be avoided or fully mitigated by ensuring that connecting habitat is retained.

7.4 The predicted scale of windfall is 40 dwellings per annum across the whole borough. In terms of potential land take of GCN habitat, the worst case scenario is that in which this quantity of development takes the greatest amount of land, which would arise if it went ahead at the lowest planned density (30 dwellings per hectare¹²). This worst case scenario would amount to a land take of 1.3ha per annum or 31.2ha over the development plan period from 2016 to 2040. This is less than 0.5% of the Borough area. It is therefore not expected that windfall development will add significantly to the impact on the conservation status of GCN in the Borough. It is important to note that if windfall development is poorly located (in GCN terms), it could still lead to offences.

Summary points. *The draft development site allocations identified in the Council's Draft Site Allocations document (June 2015), are predicted to lead to the direct loss of two ponds, in areas of low GCN occupancy (in the green zone). 35 ponds are within 500m of draft site allocations in areas of higher occupancy (in the orange and yellow zones) but it is expected that significant impacts on the majority of these can be avoided or fully mitigated. The scale of expected windfall development suggests that windfall will not have a significant impact on GCN.*

8. Avoidance, mitigation and compensation options – law, policy, guidance and practice

8.1 The National Planning and Policy Framework paragraph 118 puts in place as policy that

'local planning authorities should aim to conserve and enhance biodiversity by applying the following principles:

if significant harm resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts),adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused'

8.2 This establishes a hierarchy in which development should seek first to avoid impact, then mitigate the unavoidable impacts, and only if there are likely to be residual impacts after avoidance and mitigation options have been explored, should development rely upon compensatory measures to avoid harm.

8.3 To an extent this hierarchy is also established as a matter of law in the UK by the Habitat Regulations in relation to the licensing of operations which may affect European Protected Species (EPS). The Regulations make clear that licences which allow offences under the Regulations should only be granted where there are no satisfactory alternatives.

¹² The lowest planned density in the Woking Core Strategy Policy CS10

8.4 The Regulations transpose into UK law the Habitats Directive¹³. 2007 European Commission Guidance¹⁴ on implementation of the Directive states that the alternatives must be assessed with regard to the prohibitions in Article 12 of the Directive. In effect the Directive, the Regulations and the Guidance establish that Natural England, in exercising its regulation of operations which may affect EPS, should not licence operations which give rise to offences (including killing, injury or disturbance of EPS, or damage to their breeding or resting places) unless it has first satisfied itself that the likelihood of these offences cannot be avoided.

8.5 In addition, it is Natural England's practice to follow the mitigation hierarchy approach in its licensing work by seeking to minimise unavoidable harm and then securing reasonable mitigation as the preferred option, before considering compensation measures. Natural England would not, however, generally consider mitigation to be an acceptable alternative to compensation measures, if that mitigation would be expected to provide less effective protection against adverse effect on conservation status than would compensation. This is consistent with the 2007 guidance in that it states that the most appropriate alternative should be chosen to ensure the best protection of the species while solving the problem/situation (III.2.2, para 37).

Summary point. *The avoid-mitigate-compensate hierarchy is established as a matter of policy by the National Planning Policy Framework and to an extent as a matter of law by the Habitats Regulations and related European community guidance.*

9. Avoidance of development impacts on GCN in Woking

9.1 This strategy, by setting out a picture of the distribution of GCN in Woking, enables the planning authority to take into account the likely impact on GCN that would arise in different locations. It offers confidence that the draft development allocations will have only a modest impact on GCN in the Borough. Also it enables the Council to assess the impact of the draft development allocations, and any other proposals which may come forward, and steer development away from the areas in which higher impact is likely; that is, the orange zones, and to a lesser extent the yellow zones, defined above. It is Natural England's advice to Woking Borough Council that it should steer development in this way, as this would be consistent with NPPF and its own planning policies. That it has the opportunity to do so in such an informed way is exceptional, as it has not been practicable for Natural England to offer planning authorities an overarching view on GCN populations at borough level before this project.

9.2 In addition to steering the location of development, avoidance of offences can be ensured to an extent by steering the timing of work. In particular, where the timing of work can be planned, site protocols should ensure that works which remove or interfere with pond

¹³ **Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora**

¹⁴ **Guidance document on the strict protection of animal species of Community interest under the Habitats Directive 92/43/EEC, Final version February 2007**

habitat should be timed to coincide with the autumn and winter when GCN are less likely to be in ponds.

Summary point. Avoidance of impact can be achieved to a great extent: the draft development allocations are expected to have modest impact; the council is advised to steer development away from high impact locations; and some avoidance can be secured by protocols on development sites.

10. Mitigation

10.1 Given that only two ponds are likely to be lost through direct land take by development but 49 in the yellow and orange zones are within 500m of a draft development allocation, it is likely that loss of terrestrial habitat and connectivity will be the main impact of the development on GCN. It is important therefore that developments are designed in such a way as to maintain habitat connectivity through the maintenance of green corridors. Guidelines for this will be provided for the Council in more detailed management planning which is to be undertaken as part of this strategy, and is explained in later sections of this document.

10.2 The draft development allocations between Hook Heath and Westfield are in the green belt and development on these sites would be expected to retain a substantial amount of green space. This is very much in line with the Council's environmental strategy, which aims to maintain the Borough as a green and pleasant place to live and work. Thus, the maintenance of green corridors through development does appear achievable, and may in practice add no space constraints to development.

10.3 Specifically in relation to the Littlewick population, which encompasses two parts of the orange zone at Littlewick and Coxhill Green, Natural England's advice is that developers should be required to undertake surveys and a full assessment of impact before a planning application is determined. This is because there is a strong population of GCN in this locality but it is confined to a relatively small number of ponds. No development allocations are currently proposed in or near to this population but should development (or other) operations damage even just one of the ponds, it could have a major impact on the GCN population. Site survey and assessment would allow this risk to be assessed, so that avoidance and mitigation options can be considered fully and if there is a need for habitat compensation through the strategic pilot, the required scale can be calculated robustly.

10.4 The Hook Heath population is also dependent on only a very small number of ponds and thus it too could be very vulnerable to development within or close to the golf course within which it sits. This means a similar safeguard for this population would be advisable. However, for this population some protection is provided by the surrounding land use, the golf course, which makes it unlikely that there will be particularly harmful development nearby. It would be disproportionate to make an automatic requirement survey for all development in this location. A requirement for the Council to consult Natural England, to seek a view on any large development proposals which arise in the Hook Heath orange zone, would be a sufficient safeguard. Natural England will advise the Council on whether any such developments should be authorised to rely on the Pilot to address their impacts.

Natural England may also advise in some cases that survey and assessment is necessary to inform this.

Summary points. *Mitigation will be secured by retention of green corridors within development sites and, within the Littlewick Coxhill Green and in some instances in the Hook Heath orange zones, by a requirement for survey and assessment work to inform necessary measures.*

11. Compensation

11.1 In Woking the range of sites which is owned or managed in some way by the Council and the expanding suite of Suitable Accessible Natural Green Spaces (SANGS) provide good opportunity to establish areas of new habitat. This suite of land is shown in figure 3.

11.2 Land can be selected so as to augment the populations in the orange zones and improve the habitat connections between these zones and potential GCN habitat elsewhere. Natural England is satisfied that land selected strategically in this way will provide greater benefit than would any habitat which could be retained or improved within the constraints of development sites.

11.3 It is anticipated that new or improved ponds can be provided in locations which will be colonised sufficiently by GCN through natural dispersal, as these ponds will be provided by the Council near to existing GCN ponds and connected to them by suitable habitat to facilitate movement of GCN. It is anticipated that this will remove the need to trap and translocate or exclude populations from development sites, as the compensation sites would in themselves safeguard the conservation status of GCN in the Borough from any overall reduction of GCN population or habitat being caused by development. This expectation will be reviewed as management plans for the compensation sites are prepared.

Summary points. *The range of sites which is owned or managed in some way by the Council and the expanding suite of Suitable Accessible Natural Green Spaces (SANGS) provides good opportunity to establish areas of new or improved habitat as compensation for residual impacts.*

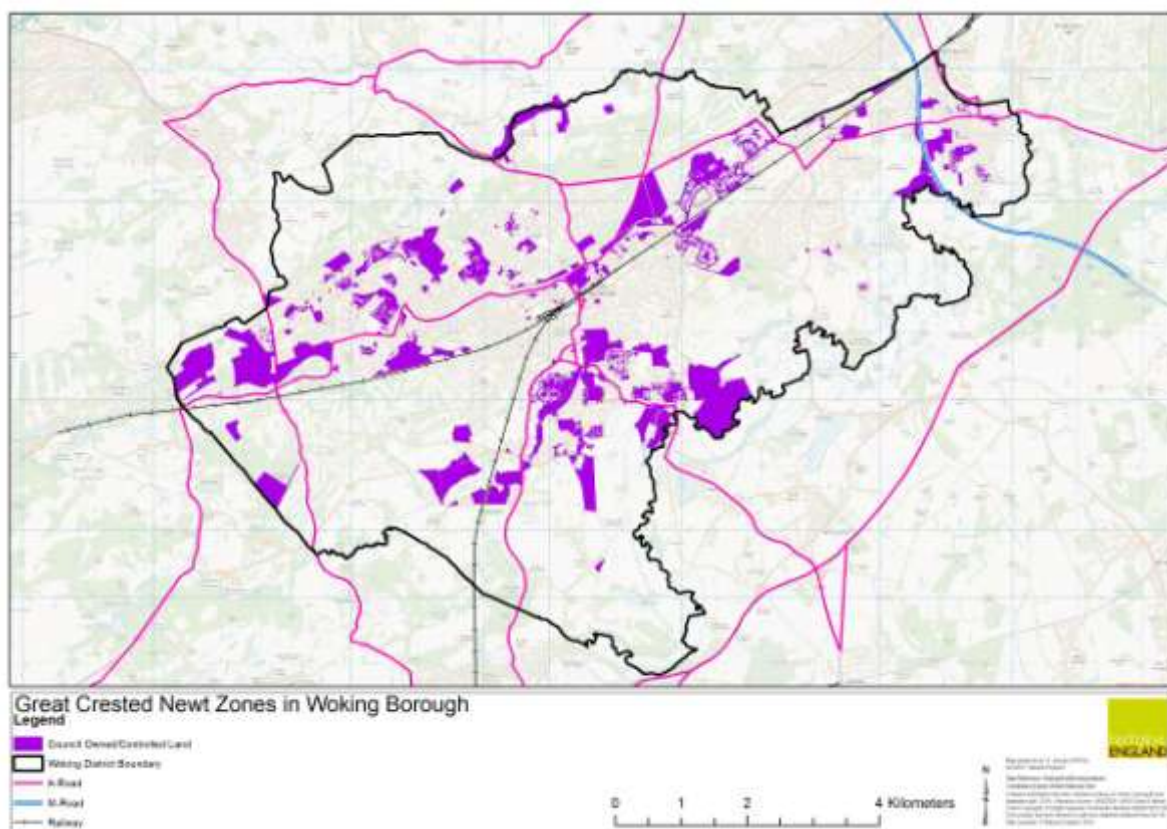


Figure 3: The range of sites which is owned or managed in some way by the Council and the expanding suite of Suitable Accessible Natural Green Spaces (SANGS)

12. Scale and location of compensation

12.1 It is established practice in GCN licensing that where loss or substantial damage of a known GCN pond is unavoidable, two ponds should be provided in compensation. This ratio reflects the risk that any individual pond created may not prove successful in supporting GCN. In Woking, two ponds will be lost through direct land take but these are in the green zone, in areas of low GCN occupancy. Thus the two to one ratio is not appropriate. One to one replacement, that is, provision of two high quality habitats in the form of new or restored ponds, well located in relation to the three existing strongholds should be considered a net gain.

12.2 In relation to the 141 ponds within 500m of draft development allocations, impacts on the 92 in the green zone are unlikely to have a conservation impact, because of the low level of occupancy of this zone by GCN. For the ponds in the orange and yellow zone it is possible that there will be some impact in terms of loss of connectivity, hibernation and foraging space. A substantial proportion of these ponds do not have GCN, or are separated from the possibility of new impact by existing barriers to dispersal. For a proportion of the rest, it will be possible to safeguard or put in place terrestrial habitat such that impacts are avoided or fully mitigated. It is not possible before the detailed design of development to be sure of the proportion of ponds in which there may be residual impacts. However, it is advantageous to exercise judgement on this proportion because it allows a scale of habitat

compensation to be set, which in turn will facilitate early, strategic establishment of compensatory habitat, before impacts can occur.

12.3 In judging the number of ponds where terrestrial habitat is likely to be lost and judging the scale at which it should be replaced, two factors are of particular importance:

- Terrestrial habitat availability is unlikely to be the limiting factor on GCN populations in Woking. The limiting factor is much more likely to be the number of suitable ponds and the connectivity between them.
- The value of terrestrial habitat is usually not closely correlated with its area, so it does not need to be replaced like for like.

12.4 For these reasons, in Woking Natural England's advice is that the best form of habitat compensation to address the impacts of development on terrestrial GCN habitat would be pond creation or restoration in locations which allow GCN to colonise from their existing ponds, where they are most clustered in the orange zones. The new or improved ponds should be located so as to give GCN additional access to a greater area of terrestrial habitat. In addition to the two ponds that will be restored or created to replace ponds which may be lost directly, it is proposed that a further six should be created to offset impacts on terrestrial habitat. It is Natural England's considered view that this scale of habitat improvement, eight new or restored ponds, would more than offset the level of impact on GCN likely to arise from planned development in Woking in the period to 2040.

12.5 Subject to detailed management planning, the total of eight new or restored ponds could be located and timed as follows:

- A first tranche at Westfield area because this is one of the two clusters (albeit the less affected) close to draft development allocations. There are ponds in this location which could be made suitable for GCN within a year, by removal of fish or over-shading vegetation.
- A second tranche in the Hook Heath area. Whilst this is the most affected stronghold and the most vulnerable in its current state, the main issue for this population is not development but the current habitat quality. This strategy for managing development impacts should not be reliant upon resolving the issues first at this location because management for GCN has not yet been explored with the main landowner and occupier, the golf club.
- A third tranche in the Littlewick area. Whilst it would be worthwhile to expand the pond habitat at this location, it is not as urgent as action at the other two strongholds because the habitat is in relatively good condition and there is no draft development allocated close enough to have an impact.

Summary points. *It is proposed that eight ponds are created or restored as habitat to compensate for the potential residual impacts of development. It is Natural England's considered view that this scale of habitat improvement would more than offset the level of impact on GCN likely to arise from planned development in Woking in the period to 2040. Broad proposals are made for the location and timing of this habitat compensation,*

with the intention that it is put in place ahead of any likelihood of development impacts.

13. Requirements on developers in the three zones

13.1 The three zones present an indication of the likely severity of development impacts on GCN and to an extent of the likelihood that developments will encounter GCN or its habitat. However, it should be noted that even in the green zone, where GCN are sparsely distributed, offences (killing, injury, disturbance, etc.) are still possible. Thus across the whole Borough, any development which is not participating in the scheme will be expected to adhere to normal ecological practice for developments in an area where GCN are known to be present. This includes undertaking local record searches and such surveys that are judged necessary to confirm whether or not GCN are present on the development land or might be affected by the development, and applying for a licence where necessary.

13.2 Where developers wish to avoid these requirements, they may participate in the pilot, by choosing to rely on strategic measures undertaken by the Council to safeguard the conservation status of GCN in the borough.

13.3 It is anticipated that the Council would then seek a section 106 legal agreement to secure a funding contribution towards the strategic measures before it grants planning permission. Natural England advises that it would be logical for the required level of contribution for developments in the orange zone to be higher than that for developments in the yellow zone, and contributions in the yellow zone in turn to be higher than those required in the green zone. This would help to make the contributions proportional to risk of impact on GCN.

13.4 In two parts of the orange zone, at Littlewick and Coxhill Green, where good numbers of GCN are concentrated in a small number of ponds, it is possible that even a small development with effect on one pond could have a substantial effect on the population of GCN at this location. At present there is no draft development allocation close enough to impact on this site. Should a development proposal arise in these parts of the orange zone in the future, Natural England's advice is that it should provide a full assessment of impacts. This is justified as an exception in this strategy because of the risk of an acute impact. The likelihood of such an impact would not rule out development. The developer in such a case would have the option of applying to Natural England (as normal elsewhere) for a GCN licence. If, instead, they wished to rely on the Council's strategic compensatory habitat, the full assessment would enable an appropriate funding contribution to be agreed, and for timely compensation to be delivered.

13.5 A similar scenario may arise in relation to the Hook Heath population though, as explained in 10.4 above, bespoke survey and assessment will only be required in some instances in the Hook Heath orange zone.

Summary points. Developers in the Borough may avoid the normal ecological requirements in relation to GCN, including those for survey and impact assessment, as long as they agree with the Council a contribution to strategic measures for GCN which are provided by the Council through this pilot project.

The Littlewick, Coxhill Green and - in some instances- in the Hook Heath orange zones are an exception to this, where developers would be expected to undertake survey and assessment work, before they are able to agree with the Council a funding contribution which would allow them to rely on the Council's strategic measures for GCN.

It is advised that the funding contributions required should be highest in the orange zone and lowest in the green zone, so as to reflect the likelihood of impacts on GCN.

14. Delivery timetables

14.1 It is written into the 2007 European Commission guidance and is established practice that compensation measures should be in place and functional before the risk of the impact which they are intended to address. The risk of impact on GCN arises on development sites not when permission is granted but when the first spade hits the ground, as development operations begin. The Council's draft allocations plan now provides for development spread over a period from 2016 to 2040. Most of the allocated sites which would take a large area of green habitat are timed to commence in 2022, many after 2027, including the draft allocation in the orange and yellow zones, land to the north west of Saunders Lane, Mayford¹⁵ GB11. This means that there is ample time to get compensatory habitat well established before any impact is possible on these sites. Even if permissions were granted on the basis of this strategy from the beginning of the next financial year (April 2016), it is unlikely that they would begin implementation on the ground for 9 months or a year. This allows adequate time for management planning and habitat improvement to begin and take effect. For example, removal of fish by draining down and rewetting ponds could be undertaken and have quick effect in this period.

14.2 It will be necessary for the Council to profile through time the scale of planned and windfall development. This will allow the delivery of habitat improvement to be undertaken on a staged profile, ahead of development, so that any parcel of habitat is ready ahead of immediate necessity.

14.3 Once habitat improvement begins at any selected site, the expectation is that the management necessary to establish and sustain the habitat will be secured by the Council for a 25 year period. This reflects the importance that any one parcel of land may have in compensating for impacts at a number of other sites. It is appropriate that compensation sites are afforded long-term management and security to give confidence that the measures to maintain and enhance conservation status are successful.

Summary points. Habitat compensation can be put in place on a timetable which allows it to be ready ahead of need for any development permitted from April 2016 onwards. This

¹⁵ <http://www.woking2027.info/allocations>

habitat will be managed and safeguarded by the Council for 25 years.

15. Confidence in delivery

15.1 This conservation strategy clearly lays out the current distribution of GCNs in the Borough of Woking. It considers the likely impacts of planned developments and anticipated windfall developments. The “avoid, mitigate, compensate hierarchy” is addressed and options for strategic compensation are presented.

15.2 This strategy does not seek to define a Favourable Conservation Status or Favourable Reference Values for GCN in the Borough, though the monitoring proposals which it sets out will allow this to be done in the future, if desired. The strategy takes an informed ‘equilibrium’ approach, which assesses impacts at a meaningful scale in terms of GCN ecology and sets out how development can deliver a net gain for GCN. Whilst the scale of impact is not assessed with precision, and the scale of compensatory habitat is a matter of judgement rather than exact science, we are confident in our understanding of the impacts and that the proposed compensation will bring about a net improvement in the conservation status of GCNs in the Borough.

15.3 Adoption of this strategy by the Council, along with commitment to compensation site management plans approved by Natural England, provides confidence that the GCN populations will be protected in the Borough. This means that (except at Littlewick, Coxhill Green and in some instances Hook Heath) site survey of GCN populations on individual development sites can be avoided where ever development contributes to the strategic compensatory habitat to be put in place by the Council.

15.4 In addition, as the compensation sites will in Natural England’s view secure a net benefit to GCN and will be designed to facilitate colonisation by natural dispersal of GCN, there should be no necessity (in terms of the impact on conservation status) for GCN to be trapped and relocated from development sites to the strategic compensation sites. This means subject to agreement between Natural England and the Council on the management plans for compensation habitat, it is anticipated that the normal standards for exclusion, trapping and translocation of GCN on development sites will not be necessary as a norm for development sites which may contain GCN.

Summary point. Subject to management plans which give confidence that the strategic compensation habitats will be colonised by GCN through natural dispersal, it is anticipated that the normal standards for exclusion, trapping and translocation of GCN on development sites will not be required as a norm for development sites which may contain GCN.

16. Procedures for licensing and planning permission for projects which may affect GCN

16.1 In line with NPPF paragraph 118 and its own planning policy for protection of biodiversity, the Council will take into account this strategy in further consideration of the draft development allocations and determining applications for planning permission. Where the strategy does not provide sufficient advice and guidance to support decision making in the Council, it will seek further advice from Natural England or its retained consultants on biodiversity matters (currently Surrey Wildlife Trust).

16.2 Provision of monitoring information by the Council, its supervision of any protocols necessary for GCN on the development sites, the provision and implementation of management plans on the compensation sites (for a 25 year period), and other necessary commitments to be made by the Council and Natural England will be secured by a Memorandum of Agreement between these two bodies. Natural England will grant an organisational licence which allows the Council to authorise development operations on sites with planning permission in the Borough, for developments which are participating in the strategic approach. This will make lawful the potential offences connected with developing land in relation to GCN on these sites, so that the developer is able to proceed without risk of prosecution for operations affecting GCN. This will allow the Council to provide a streamlined consents service and will provide simplicity and certainty for developers.

16.3 The licence will be granted for a two year period, in line with the requirements of the Habitats Regulations. Natural England will review operation of the licence before renewals, using the monitoring information specified below.

Summary point. *It is anticipated that the Council will commit to the strategy through signing a Memorandum of Agreement with Natural England. Natural England will grant an organisational licence which allows the Council to authorise development operations on sites with planning permission in the Borough, for developments which are participating in the strategic approach. This will enable developers on these sites to proceed without risk of prosecution for operations affecting GCN.*

17. Monitoring and review

17.1 A consultation on this strategy will be undertaken by the Council before the above procedures are adopted. This will inform the final design of this pilot licensing scheme.

17.2 A first review of this pilot scheme will be undertaken in spring 2016, after the launch of the procedures set out above. This will consider the cost effectiveness of the set up process in relation to the risks and benefits of the pilot scheme. This is intended to inform potential roll out of similar arrangements in other local authorities. It will also set the variables and programme for monitoring development site effects on GCN and borough wide effects on GCN.

17.3 A second review will be undertaken before March 2018, to inform the first expected renewal of the licence and ensure that any necessary adjustments are made. The information collected for this review will include but not necessarily be limited to:

- The number, location and area of the development sites permitted in each of the three zones
- The timing of ground clearance and any filling of any ponds on these sites
- Description of the mitigation for GCN secured on any sites for which planning permission has been granted and which are participating in the pilot Which compensation site management plans have been completed and agreed, and the extent to which works have been completed in line with the timetables set out in the management plans
- Assessment of the extent to which participating development projects have relied on the compensation sites and the proportion of the capacity of the latter has been drawn on.

17.4 A third review will be undertaken to inform the second renewal of the licence. This is expected to be at the end of the fourth year of implementation (2020) but may be put back by agreement for a further year. It will inform any further adjustments which are considered necessary to the pilot scheme at that stage. This review will consider the same information as the second review but also will include an assessment of the cumulative impacts of the pilot scheme on GCN, on development sites, on the compensation sites and in the Borough more widely. The variables to be measured on the compensation sites will be set by their management plans. It is anticipated that field survey for the third review will include eDNA sampling, which shows presence or absence of GCN in ponds, and pond habitat suitability surveys, which provide information necessary to define habitat management priorities. The Council is advised to seek the assistance of local expert groups in this review, to help ensure that it is based on the best available information.

17.5 In addition to monitoring the habitat compensation sites, the pilot will need to ensure the Council is made aware of any changes in the condition of the three main clusters of GCN habitat in the borough and the likelihood of any significant changes in the distribution of GCN across the borough. To this end it will undertake sample monitoring at locations to be selected. It will also take into account other data submitted to it by Surrey Amphibian and Reptile Group and other key partners.

Summary point. A programme of monitoring and review will be put in place to ensure that the impacts of this pilot on GCN and development interests are understood. This will inform any necessary adjustment of the Council's strategic measures for GCN and potentially the application of similar strategic approaches for GCN elsewhere in the country.

Annex 1 – Notes on modelling

Modelling was undertaken in order to further understand the distribution of GCN in the borough particularly in relation to the characteristics of the habitats found there. This also gave a good indication of where habitat improvements would be likely to have the greatest benefit. While the outputs were helpful, the small area modelled and the limited validation that could be carried out meant that no decisions have been based purely on modelled outputs as they were not considered as robust as the on the ground intelligence available.

The following notes provide a brief account of the modelling undertaken and the results produced.

Software employed

Maxent: <https://www.cs.princeton.edu/~schapire/maxent/>

The GLM modelling was done in R (<https://www.r-project.org/>) with the Maxent modelling additionally using the [dismo](#) package. The [raster](#) package was required for the spatial modelling (i.e. both GLMs and Maxent).

The raster layers were prepared in ArcGIS using the *Focal Statistics*, *Euclidean Distance* and *Point Density* tools respectively.

The connectivity analysis was undertaken using the [Linkage Mapper](#) toolbox which runs in ArcGIS, this includes *Centrality Mapper*, which is dependent on *Circuitscape*.

<http://www.circuitscape.org/linkagemapper>

<http://www.circuitscape.org/>

Pond level modelling

Each of the HSI variables and the HSI score were tested to determine the strength of correlation with the eDNA presence/absence results. A binomial generalised linear model was used to test the correlation. The eDNA results for GCNs show a strong correlation with the overall HSI score. There is no one single HSI variable which is especially contributing to the likely presence of GCNs, but more the combination of factors.

When testing each HSI variable using both the presence/absence data from the eDNA results and the actual eDNA score (i.e. how many samples showed a positive result), different explanatory variables showed a better/worse correlation using either dependent variable, i.e. there is no consistent benefit to using the GCN_Score over the presence/absence data.

GCN eDNA results from the 36 ponds with HSI scores were also tested for correlation with variables derived from Land Cover Map 2000. The results showed a positive correlation with the extent of urban areas within 250m (or a negative correlation with distance from urban areas) and a negative correlation with the extent of arable land. This suggests that urban areas may provide a greater diversity of habitats required by GCNs than arable areas. They also showed a weak negative correlation with the extent of woodland and conversely with distance to heathland.

The GCN eDNA results were tested for correlation with the density of ponds. The results show that there appears to be no statistical correlation between pond density and great crested newt eDNA results for Woking.

Climate variables extracted from the Woldclim climate dataset were also tested and the results showed no clear correlation between the climate variables and GCN occurrence.

Pond Level GLM binomial model

Pond level GLM models were tested using combinations of the most significant explanatory variables. After scaling those variables not in range 0 to 1, the best fitting model found included the explanatory variables *HSI score*, *Shading* and *distance to arable land*. Applying this model to all the ponds where HSI data had been collected resulted in ponds with a high habitat suitability index but in arable areas having a low probability of GCN presence.

The best fitting model found without using the HSI score had *aquatic vegetation*, *shading* and *distance to urban areas* as explanatory variables.

Using *GCN_Score* as the dependent variable, the best fitting model had *HSI score* and *arable distance* as explanatory variables.

Spatial modelling

There are 48 ponds where eDNA samples were collected of which 5 have positive eDNA results for GCNs. In addition there were 8 validated occurrence records with 1m grid references. Relationships were tested using only variables that can be mapped spatially across the whole of Woking district.

GLM models were tested using combinations of the most significant explanatory variables.

The 'best fit' model found for the eDNA data using scaled variables had *distance to arable land*, *distance to woodland*, and *distance to heathland*, as explanatory variables.

It was not possible to validate the output since all suitable records have been used for training the model. Pond density did not come out as an explanatory variable, despite ponds being a key habitat requirement for newts.

Maxent (Maximum Entropy Modelling)

Maximum Entropy models were tested using the 5 positive eDNA records and the same raster layers as for the GLM models.

Using explanatory variables from previous work undertaken for GCN in Kent the result is strongly influenced by pond density.

The maximum entropy approach models occurrence data against random background points. Using the negative eDNA values as background values (i.e. non-random) results in distance from arable land to be the only determining variable. Including all available explanatory variables in the Maxent model provides a better balance of explanatory variables: *Pond density*, *distance to heathland*, *distance to woodland*, *distance to arable* and *annual temperature range*.

Validating the results against the eDNA results, i.e. the 5 positive records used for training with the 43 negative results suggests that the model is providing a good fit to the training data and absence data GCN results. This is somewhat surprising given that the Kent Maxent model (using occurrence records from the across the county rather than the eDNA data) was found to be no better than random at fine spatial scales (25m). Also looking at the location of the negative GCN eDNA results (black crosses) on the output would suggest that many of these are in areas with high values from the Maxent.

Including ponds outside of Woking to produce the pond density layers does appear to reduce the extent of areas mapped as high probability for newts.

There is still a strong correlation between the predicted suitability for GCNs and the positive and negative eDNA results (the latter of which weren't used for training the model).

The SARG records contain eight validated records with 1m grid references within the Woking boundary. Testing these against the Maxent model trained with the eDNA positive records produces a poor fit.

Training and testing the model using the available positive field records and the negative eDNA records shows an improved fit to the training data combined with the absence data.

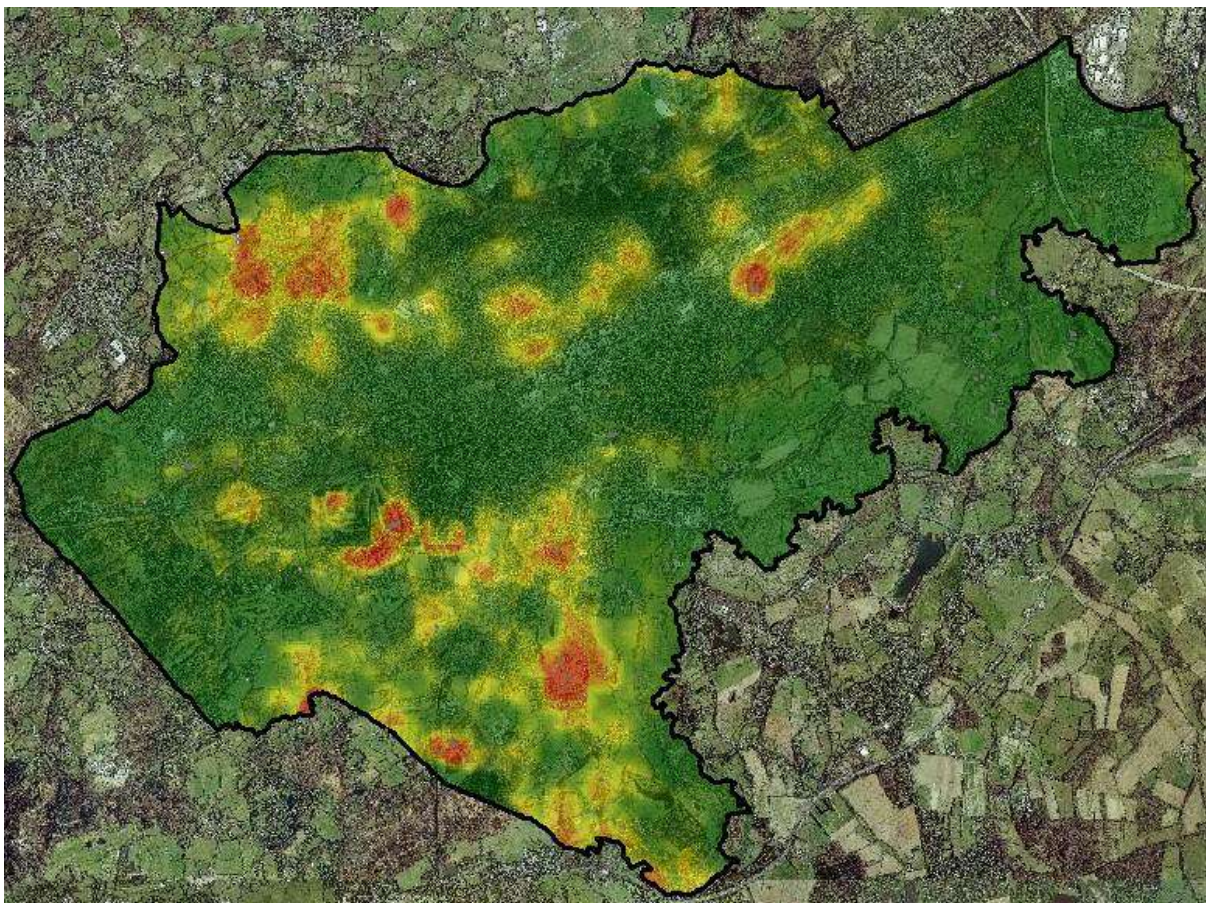


Figure 4: Results from the Maxent model. Red areas show high suitable for GCN.

Connectivity analysis

Connectivity analysis for GCNs in Woking was undertaken using the *Linkage Mapper* toolkit including *Centrality Mapper*, which is dependent on *Circuitscape*.

The pond polygon layer, including ponds within 1km of Woking, was used as the *Core Area* layer. The resistance layer was created by inverting the final habitat suitability layer created using Maxent, i.e. areas of high suitability are assumed to have low resistance and vice-versa. No barriers, e.g. roads, rivers etc. were modelled in the resistance layer.

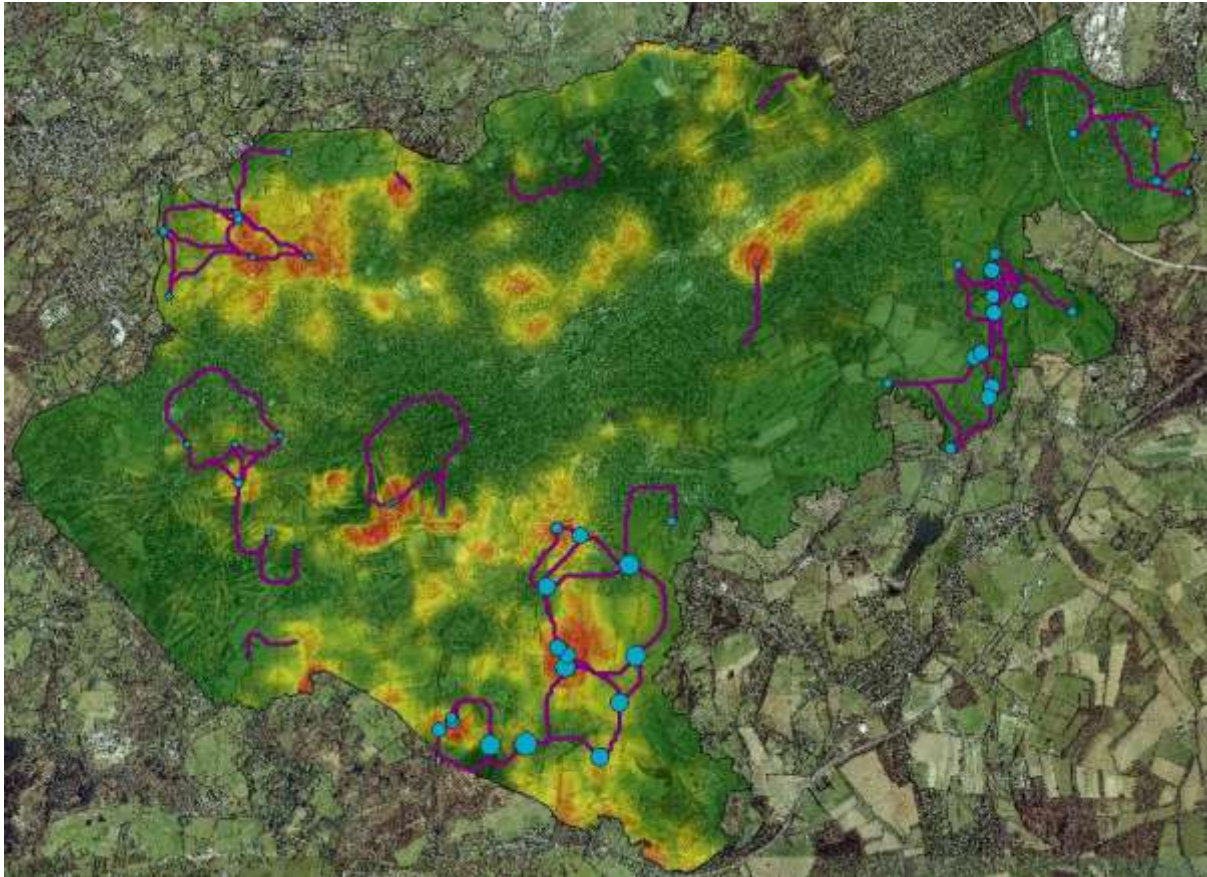


Figure 5: Output from the connectivity model showing pond (pale blue) size relative to their connectivity score and least cost paths (purple) overlaid against the habitat suitability predictions from Maxent.

The results show the connectivity between ponds even where these areas have been predicted to have low suitability for newts, the results should therefore be interpreted in conjunction with the habitat suitability modelling. The outputs do though highlight areas with high suitability for GCNs and good connectivity (which may require protection) and also areas of high suitability but where connectivity is poor (which may benefit from pond creation).

Annex 2 – Current approach – Development and Great Crested Newts

